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PART I.—ORIGINAL COMMUNICATIONS.

ARTICLE I.

On the Treatment of Fevers and Inflammations without Mercury.

By A. G. Henry, M.D., of Pekin, Illinois.

It is no intention of mine to join in the crusade (now going on in the ranks of the advocates of the botanical system,) against mercury, as a remedial agent in the treatment of disease; but my object is, to show that it can be dispensed with in the treatment of those forms of disease, in which it has been regarded by the great mass of the profession as indispensable; and if possible, contribute something toward correcting the abuse of one of the most valuable remedies in our materials of medicine. The indiscriminate use of calomel by the profession in the Valley of the Mississippi for years past, has rendered them as obnoxious to the charge of quackery, as the Thompsonian, who prescribes his lobelia in every form of disease. That great mischief has resulted to the community from its abuse, cannot be questioned; and if we have a remedy of greater power, that does not produce any of those unpleasant consequences which so often follow the mercurial plan of treatment, it will no doubt be acceptable to the community, and readily received by the profession.

The experience of the last ten years has satisfied me, that we have, in four and six grains of opium, a remedy of far greater power in the treatment of fevers and inflammations, than mercury; and which can be substituted for it with perfect safety, and save to our patients an immense amount of suffering.

I claim to have been the first to call the attention of the profession to the use of from *four to six* grains of opium in fevers and inflammatory affections; and I have for the last ten years insisted most strenuously in my intercourse with medical men, that the evil effects, or want of benefit resulting from the use of opium in acute forms of disease, was attributable to the fact of its being given in too small doses. I am happy to find myself sustained in this opinion by Dr. Griffin, in a recent publication on the use of opium in abdominal affections, where he ventured upon its use to the extent of three grains of opium every two hours, with the most happy results. I have for many years administered it in doses of from four to six grains in cases of inflammatory dysentery after bleeding, and repeating the dose in three or four hours, if the first did not entirely subdue the disease, *which it will do* in nine cases out of ten.

When the practice receives the partial sanction of such names of Stokes, Bell, and Griffin, I shall expect that the suggestions of an obscure country practitioner will secure from the profession a sufficient degree of consideration to induce a trial of the remedy.

In an article upon the use of *large doses* of opium in fevers and dysentery, published in the August No. of the Missouri Medical and Surgical Journal, 1845, I submitted the following propositions as the results of long observation and experience in the use of large doses of opium; and their correctness has been confirmed by subsequent experience.

1st. That there is more danger of injurious consequences resulting from the use of one or two grains of opium in fever and inflammation, than from four to six grain doses.

2d. That two and three grain doses will often aggravate the symptoms and do positive injury, when a four or six grain dose would secure a favorable crisis in the disease.

3d. That *ten* grains of calomel, combined with four or five grains of opium, will act more decidedly and promptly on the secretory system, than thirty grains without the opium, or with one or two grains; assuming that both shall remain in the system the same length of time without passing off by the bowels.

4th. That a five grain dose will not constipate the bowels as much as a one grain dose, *neither will it produce as much sleep* as a grain and a half, or two grains.

5th. That when you produce ptyalism by combining large doses of opium with your calomel, you produce it more promptly, and avoid all danger of profuse salivation, with mercurial irritation.

Up to the time of the publication of that article, I had most generally combined calomel with my opium for the purpose of securing a cathartic effect after the influence of the opium had passed off, but not with a view of producing ptyalism. But having about that time removed from Springfield to a neighborhood where calomel was used by the faculty as the main remedy in every form of acute disease; and where its injurious effects were plainly visible in the broken down constitutions of very many of the adult population, induced by often repeated salivations, I was led in such cases to forego its use entirely, and the result has been most satisfactory.

When called to treat an ordinary case of bilious remittent fever, if there is high arterial action, I use the lancet, followed by an emetic of ipecacuanha and tartar, given so as to produce an emetico-cathartic effect; and, as soon as the stomach will retain it, give a four or six grain dose of opium, and repeat it in the course of three or four hours, if the first does not produce full diaphoresis. The next morning I give the black draught, or salts and cream tartar, until the bowels are freely moved, and at night repeat the dose of opium. The patient rests quietly during the night, and I confidently expect in the morning to find a full intermission; when one or two five grain doses of quinine puts an end to the fever, and secures a rapid convalesence, free from all those distressing consequences which are so apt to follow the mercurial plan of treatment.

The results of this practice are most satisfactory in fevers with gastric irritation, or abdominal affections, which are found so difficult of management, and which so often prove fatal, when treated on the most approved plan hitherto recommended to the profession.

In such cases, a full bleeding from the arm, with cups to the epigastrium, followed by a four or five grain dose of opium during the first twenty-four hours of the attack, seldom fails to secure permanent relief.

My object in this communication is to show that fevers and inflammations can be safely and successfully treated by sub-

stituting large doses of opium for calomel, now so generally relied upon by the profession, particularly in fever. But where it can be used without danger of salivation, I would not object to ten or twelve grains being given with the opium, in the course of the twenty-four hours; for it must be conceded that we have no better cathartic in febrile affections than calomel. Still in those cases where I have dispensed with its use entirely, I have secured apparently as favorable results.

It is the relying upon it as the *main remedy* to which I most strenuously object, and not to its being used with proper discrimination.

Since 1836, when I first ventured upon the use of five grain doses of opium, I have relied upon them with great confidence in the treatment of all acute pneumonic affections. After a full bleeding at the commencement of the attack, I give nauseating doses of tartar until the bowels are feely acted upon, when I administer a four or six grain dose of opium, and repeat it, if necessary, in the course of four or six hours. Saline laxations, with expectorants, will generally complete the cure without a repetition of the bleeding, or opiate.

I have often subdued the most violent attacks of pleuritis, with a single bleeding, followed by a full dose of opium.

The suggestions of Professor Barbour, of giving the opiate a short time previous to the bleeding, I am inclined to think is an improvement upon my practice, in pneumonic inflammations; but I cannot speak confidently from experience.

I am satisfied that the antiphlogistic power of opium has never yet been properly appreciated by the profession; but I find it now beginning to attract the attention of the faculty. venture the prediction, that in a few years more, it will be regarded by the profession as a remedial agent of far more power, when given in full doses, in the treatment of fevers and inflammations, than mercury.

As a remedy in enteritis and peritonitis, it is invaluable; and although not generally admissible in inflammations of the cerebro-spinal system, still, in those cases, it can be used with safety and advantage simultaneously with blood-letting, in the onset of the attack. In all cases of cerebral affections occurring in the latter stages of fevers, resulting from loss of power, a *full dose* will change the entire complexion of the case in a few hours, and place the patient in a state of safety.

For a more full and detailed history of my mode of using opium in fever, and particularly those of a typhoid and congestive character, I must refer the profession to my article published in the Missouri Medical Journal for August, 1845.

I am fully aware of the deep rooted prejudices that exist in the minds of medical men against the use of opium, and especially so against the *dose* which I recommend. But I know them to be entirely groundless. I have in the course of the last ten years administered four and six grain doses to thousands of patients, under almost every variety of circumstances, without in any one instance experiencing any unpleasant consequences from an over dose. I am fully convinced from observation, that cases do occur where a four or six grain dose could be given once or twice in the twenty-four hours with safety, where two grain doses, repeated every three or four hours, until ten or twelve grains had been given, would prove fatal.

I have purposely avoided in this as well as in my former article, entering into an examination of the "modus operandi" of five grain doses of opium, preferring to leave that question to be settled by each member of the faculty, as may best suit his preconceived opinions; believing that *facts* are now more eagerly sought for by the profession, than theories.

Should any gentleman, however, object to giving the practice a trial, for want of a *philosophical theory* to sustain it, and will make his objections known through the columns of your Journal, I will do my utmost to supply the deficiency.

Pekin, Ill. November 26th, 1846.

ARTICLE II.

A Case of Idiopathic Tetanus. By W. Wadsworth, M.D., of Racine, Wis. Ter.

M. A. Palmer, Esq., of sanguine nervous temperament, aged 26, a lawyer by profession, had his constitution considerably impaired by successive fevers, which he suffered some years since, at the South. He, howevever, so far recovered as to be able to pursue his studies, and engaged in the practical duties of his profession.

I was called to see him on the 18th of June last, and found him suffering under a recent attack of bilious cholic, with the usual symptoms—obstinate constipation of the bowels, severe pain, nausea, and occasional vomiting; the pulse but little disturbed. Opium in full doses, combined with calomel and repeated; with warm fomentations to the abdomen, subdued the pain, and the constipation was finally overcome by castor and croton oil; and in a few days he was able to resume the business of his profession. From this time up to his recent illness, he occasionally complained of more or less irregularity of bowels, capricious appetite, and sometimes of great exhaustion from a little over-exertion. For these difficulties he took, occasionally, the blue pill, mild tonics, and port wine.

On the evening of the 1st of September I was called again to see him. Found he had slight chill, severe pain and soreness of head, coated tongue, entire loss of appetite—in fact, all the incipient symptoms of an attack of bilious remittent fever, which was prevailing extensively around him at the time. Gave an emetic of ipecac., to be followed by powders of James and Dover, with 4 grs. calomel every four hours, and the acetate ammonia every four hours. The next morning he had less pain of head, some uneasiness about the neck of the bladder, and difficulty of making water. A cathartic of senna and rhœi was given, with mucilaginous drinks, and sweet spirits of nitre every two hours.

In the after part of the day found him with considerable nervous irritation. The cathartic had not operated, and, the difficulty of making water continuing with augmented force, ordered a stimulating enema, the introduction of which gave him great pain at the time. It was, however, soon followed by free evacuation, indicative of a bad state of the secretions. Warm fomentations were applied to the region of the bladder, and uva ursi, juniper, and gum arabic, was given, to which, in a little time, the buchu was added, with marked success over the urinary difficulty, and he experienced no further trouble in this respect during the whole course of the disease.

After this several days passed with but a mild grade of fever: the secretions were endeavoured to be improved with small doses of calomel, and the hydrarg. cum creta, with mild cathartics, which, by the by, always produced *more than or-*

dinary irritation in their operation, but which was easily allayed by Dover or morphine that was used for this purpose. Under this course the fever soon declined, and convalescence seemed to be fairly advancing. His spirits, which during the first part of his sickness were at times greatly depressed, were now more buoyant, the tongue becoming clean, the appetite improving, and every thing indicating that, at least, his usual health would soon be established.

But this bright prospect was soon obscured and darkened by a train of symptoms as *unique* as they were inexplicable. At noon on the 10th, while taking his dinner, he complained of some stiffness and inability to move his jaws. He was directed to wash them in some warm spirits of camphor and laudanum, and encouraged to hope that it would soon disappear. In the evening the symptoms still continuing, particular enquiries were instituted whether any local irritation existed about the mouth, *teeth, or any other part, and finding none, and the general system undisturbed*, I could not bring myself to the belief that it was any thing of the nature of that terrible disease which it soon, notwithstanding, proved itself to be. The treatment of quinine and wine was continued, and a full dose of morphia and camphor at bed time. The jaws were bathed in a strong stimulating liniment through the night. He slept well during the night, and up to this time the pulse was undisturbed, beating but eighty to the minute, full and soft, no fever, nor the slightest pain or irritation in any part of the system—save, indeed, some anxiety of mind as to the singularity and obstinacy of the difficulty about his jaws.

Soon after this, however, the difficulty of deglutition, and especially in the swallowing of liquids, and rigidity and drawing backward of the muscles of the neck, with slight general spasms, announced, in a manner not to be misunderstood, the terrible nature of the disease. The pulse was now increased in frequency, the tongue was more coated, and the discharge from the bowels was liquid, dark coloured and extremely fetid. Blisters were applied to the jaws and side of the neck; morphia, 1 gr. with 5 of calomel and morphia in grain doses, with camphor, directed every two hours; and wine, in free and large doses, given through the night. But these means produced not the slightest control over the spasms.

The night was passed without sleep or rest, the patient

often remarking that "if those spasms could be stopped he should be perfectly well." He also complained of being hungry. In the mean time the abdominal muscles became retracted and perfectly hard; the pulse 120 and weaker; the power of deglutition more embarrassed, and sometimes almost lost; the surface covered with an abundant perspiration; the spasms more frequent and more intense. Dr. Graves and several other medical friends were called in in consultation. A more decided tonic and narcotic treatment was recommended. 15 grains of quinine, 4 of opium, and 6 of capsicum was given; the quinine to be repeated in two hours, and tea spoonful doses of laudanum to be given every hour; tincture of nux vomica 20 gtt. every two hours. To these was added, after a little time, the prussic acid, 4 gtt. every two hours.

These powerful and often repeated medicines had not the slightest control over the spasms, nor did they in the least manifest their narcotic effects upon the brain or nervous system—the mind remaining clear and unclouded to the last. As the symptoms advanced the breathing became more and more embarassed; a livid palor overspread the countenance; a clammy sweat, the surface; the pulse rapidly sinking, while the spasms were increasing in frequency and power, till a general convulsion of the whole muscular system terminated at once the sufferings and life of the patient in 48 hours from the first notice of any difficulty about the jaws.

Idiopathic Tetanus is a disease rarely seen at the north, and the causes that gave rise to it in this case are very obscure. It is a matter of regret that a post mortem examination was not obtained. It might have revealed some internal lesion, which though not announced by any marked symptom, was sufficient, in a *constitution peculiarly excitable* as was his, to have brought it on. The disease of the bowels he had recently suffered, as well as the inordinate irritation produced by the mildest purgatives during his illness, would seem to indicate that intestinal irritation, or some structional lesion in some portion of the alimentary tube, was more than probably, the source of this terrible malady.

ARTICLE III.

On the use of Quinine. By A. W. Benton, M.D., of Sterling, Whitesides co., Ill.

What is the condition of the system, and what the indications which require the use of quinine?

As much as has of late been written upon the use of quinine, the answer to the above question seem still to be a desideratum in the practice of medicine. The science of medicine can be improved only by a long and careful observation of facts and phenomena as they occur around us.

These facts have to be collected, compared, and their different relations and bearings carefully noted, before any definite law, or rule of action, can be established.

As these facts and phenomena are not confined to the observation of a favored few, but are spread abroad upon the open page of nature, it often happens that a man in the humbler walks of life may discover some important truth, which the far directed ken of a more eminent man may have overlooked. Or, if he is not so fortunate as to make any new discovery, he may at least observe some trifling circumstance, that may go far to establish the truth of some previous discovery.

This being the case, it is the duty of every physician to be vigilant at his post, however limited the sphere of his observation.

It seems to me that some are too indiscriminate in the use of quinine, while others are too cautious. That quinine has a decided and specific action upon the system, under certain circumstances, is a well established fact.

This being the case it must be adapted to some peculiar state of the system, indicated by a certain train of symptoms. What this state of the system is, and what are its symptoms, have been subjects of study and observation with me for the last seven years, the length of time I have resided in Illinois.

The result of my observations is, that an impoverished and morbid state of the blood, causing a diminution of the contractility of the heart and arteries, and functional action of the capillary vessels, constitute that state of the system which calls for the use of quinine. And that this state is indicated by a more or less well marked tendency to exacerbation and

remission, if not intermission: and never characterized by that hard, unyielding, and bounding pulse which attends acute inflammation.

In the height of a paroxysm of fever, the pulse may approximate to the character of an inflammatory pulse, but still I have always found it to lack that hardness which it assumes in inflammation. The coats of the artery do not feel so rigid, and tense, and unyielding. The action of the heart and arteries seems to be more of a tumultuous action, as if it proceeded from irritation, as I believe it does; and *that* irritation caused by an accumulation of blood in the large vessels; and this accumulation, in its turn, produced by the previous diminished action which proved insufficient to carry on the natural circulation through the capillary system of vessels; which are, at the same time, laboring under, or rather ceasing to labor under, a diminished supply of nervous energy or influence.

The true theory of intermittent fever seems to me to be something like the following.

A vitiated state of the atmosphere, consisting probably in the admixture of some exhaled gaseous matter, together with a changed electrical condition, imparts to the blood an unhealthy, or morbid quality. This morbid blood, together with the electrical change, produces a diminished energy in that portion of the nervous system which presides over the circulating and organic functions of the body.

The consequence is, the blood does not stimulate the heart and arteries sufficiently to keep up their accustomed contractility, and elasticity. The capillaries at the same time are incapacitated for the performance of the functions assigned them.

From all this results a diminished action of the heart, arteries, and capillaries, insufficient to carry on the circuit of the circulation—the blood ceases gradually to find its way into the small vessels, and gradually accumulates in the large vessels.

When the capillaries get sufficiently empty, the consequence is a rigor or chill. When the large vessels get sufficiently full, or full for a sufficient length of time, the consequence is irritation and reaction, which forces the circuit of circulation till an equilibrium is established; then the reaction ceases, leaving the system in comparative health.

Then again, during the intermission, commences and continues the same diminished action, and gradual accumulation of blood in the larger vessels, and emptiness of the capillaries, till the same phenomena, in a longer or shorter period, are again produced; thus accounting for the periodicity of agues.

The action of quinine I conceive to be to neutralize the sedative poison of malaria, and restore to the blood its appropriate stimulus for calling into action the heart, arteries and capillaries, giving them tone, vigor, and stability of action.

ARTICLE IV.

Case of Abscess of the Female Breast, from which a Worm was discharged.

Dr. Thompson Mead, of Kane Co., Ills., has related to us this case, which, as far as we know, or can learn from the examination of any works within our reach, is unique in the records of medicine.

A young woman, in good health, of about 20 years of age, was, during the past autumn, while nursing her first child, attacked with pain and induration of the breast, which, after a few days, resulted in an abscess, which was punctured. Pus, mixed with blood, was discharged in considerable quantity, after which the Doctor perceived a small body protruding, and, seizing it with his forceps, drew it out. It proved to be a worm nearly an inch in length, of a yellow color, jointed, pointed at the extremities, firm in texture, and extremely active and tenacious of life. The abscess soon healed, but, at the time we saw the Doctor, another seemed to be forming at a different point of the breast.

In what way could the worm have found its way to that situation? The only possible solution of that question which occurred to us was, that it might have been generated in the intestinal canal of the child, and passed from its mouth to the breast while the infant was asleep, or holding the nipple in its mouth without sucking. This is rendered somewhat probable by the fact, that worms have been found in the nasal cavities, antrum, frontal sinuses, &c., derived from that source. The child was nearly a year old at the time of the formation of the abscess, which further adds to the proba-

bility of the conjecture. If there is some other and better explanation to be found, we will feel obliged to any one who will furnish it to us.

The worm, corresponding to the description given, has been deposited by Dr. Mead in the museum of Rush Medical College. D. B.

Chicago, Dec. 21, 1846.

ARTICLE V.

Dislocation of the Elbow, of Five Months and Thirteen Days standing. Reduction. By DANIEL BRAINARD, M.D., Prof. of Surgery in Rush Medical College.

On the 14 Dec. 1846, Mr. G. æt. 19 years, consulted me about his left elbow, which had been injured on the 2d July last. A surgeon was called at the time, who pronounced the injury a dislocation, and, as he supposed, reduced it. After carrying the member in a sling in a bent position for about three weeks, the Dr. directed him to "move it and straighten it." Such was the account he gave.

On examination, the following appearances were observed. The inferior extremity of the os humeri was found resting upon the anterior surface of the bones of the fore-arm at the elbow, the condyles and articular surfaces being distinctly felt. The radius and ulna were as distinctly felt, resting behind upon it, the fore-arm being extended, shortened about an inch, and incapable of being flexed in the slightest degree by moderate force. The muscles of the member were much atrophied for want of use, and the position of the bones could readily be recognized by the eye, as well as by the touch, so that no one could at that time fail of detecting a dislocation of both bones of the fore-arm backwards.

If it was easy to detect the nature of the accident, it was more difficult to determine upon the propriety of attempts at reduction. For ancient dislocations of the elbow have not received the same attention from surgeons as those of the shoulder; and no rules have been generally adopted in regard to the length of time at which efforts for reduction may be made with prospect of success.

In my own experience I have only met with one case of

the kind, suitable for reduction. This was of eight weeks' standing, in a girl about six years of age, and, in reducing it, the triceps muscle was found to resist so firmly that it was divided by subcutaneous section; after which the reduction was easily effected, and the result was favorable. The force required was, however, so great as not to make me think favorably of a similar attempt at a much later period. The importance of the object to the patient, however, inclined me to make the effort, which was accordingly done on the 15th inst., with the assistance of Professors McLean, Blaney and Dr. Maxwell, in presence of the medical class and several physicians.

Seating the patient upon a chair, I flexed the fore-arm around my knee, drawing it forward, at the same time, until it was brought to about its natural limit of flexion. This required considerable force. On examination, it was found that the bones were brought down to the natural position, except that the articular surface of the os humeri did not seem to be fully received into the greater sigmoid cavity of the ulna. The effusion of blood which took place at the time of the accident, and the subsequent inflammation had undoubtedly left behind, upon these articular surfaces, quantities of lymph which prevented their nearer contact. Desirous of remedying this as much as possible, force was moderately applied with the pullies to press the ulna forwards, while the humerus was drawn backward.

This produced a decided improvement, without entirely effecting the object in view. A roller was applied about the hand and fore-arm, with compresses upon the elbow in such a manner as to prevent the danger of a reproduction of the displacement, the fore-arm placed in a sling in a bent position, and evaporating lotions applied. Considerable swelling occurred, which, at the end of a week, had subsided sufficiently to allow of passive motion for restoring the movements of the joint. Flexion and extension are now made to a great extent, and the bones have come very nearly to their natural position; so that no doubt exists that with good care and perseverance the use of the member will be regained, and with little if any defect in the joint.

So favorable a result with so little force was far from being anticipated. But it should be added, that the patient was not

very muscular; and that the system was in a state of debility and relaxation, in consequence of intermittent fever, under which he had labored during the autumn. The care which had been taken to keep the joint extended also evidently favored reduction, since it was only necessary to use the forearm as a lever in flexion to bring the bones to their proper places.

Without these favoring circumstances, it is obvious that much greater difficulty might have been experienced in the reduction.

Chicago, Dec. 31, 1846.

ARTICLE VI.

On the use of Nitric Acid Issues in Chronic Diseases. By P. A. Allaire, M.D.

We find, on consulting dictionaries, dispensatories, &c., nitric acid noticed chiefly as a tonic, alterative, and disinfectant. As a caustic, it is scarcely mentioned, although it possesses powers in this respect, inferior to no other article. As a cautery, for the formation of issues, I know of no authority recommending it; yet when used in its concentrated state, it seems to me much superior to the article usually had recourse to, viz. Potassa; for it will destroy the cutis down to the cellular tissue in from five to eight minutes, whereas the potassa requires nearly as many hours.

Metal at a white heat is alone more rapid in destroying the living tissue, but the application of a hot iron will not, even in idea, be tolerated by many patients, and, therefore, cannot be used. And, as quickness in the formation of issues, as well as in every other painful operation, is important, (the amount of pain being always proportionate to the time occupied) therefore the nitric acid, for this reason alone, may well merit attention. It is also as manageable as any other article, is very cleanly, and has nothing in its appearance terrible to the patient.

I wish here to notice the effect which late standard authorities attribute to issues. If I am correct, they are regarded chiefly as *revellants*, their utility being supposed to be in a ratio

to the irritation they produce; little importance being assigned to the discharge. They are therefore made small, and irritation kept up in them by the use of issue peas and other foreign substances. Many of the older surgeons used the issue for the discharge, and yet, strangely enough, made them quite small. My experience has led me to use the issue as a drain, or as a means of steadily depleting a part; believing depletion as important in chronic inflammation as in acute, and that its activity should ever be proportioned to the activity of the disease. I believe, therefore, that the true method is to make the issues large, and in number varied as the disease under treatment is more or less extensive. It is also proper to avoid introducing into them any foreign substance, which always creates an unhealthy and offensive discharge, but, by a simple or slightly stimulative dressing, keep them healthy, allowing the healing process to go on as it will. By this mode of management the sore will generally close in twenty-five or thirty days, which I think a great advantage; because the constitution cannot in so short a time *adopt the discharge as a part of the healthy condition;* for the moment this occurs, then ceases the benefit of the issue as a drain, and also as a revellant. After the issues are healed, they may be again opened after the lapse of eight or ten days, if the continuance of the disease demand. And thus the depletion is again commenced, and kept up intermittingly as long as the particular case may require.

So successful have I found this method, that, in curable chronic diseases of an inflammatory or sub-inflammatory character, of some six and eight years continuance, it has, in my hands, very rarely failed of securing a favorable result and often has been successful without attention to diet, exercise, &c. I do not, however, underrate the value of revellants, or counter-irritants; as a class they are most important; yet they often fail in relieving long standing disease, even when perseveringly applied, and combined with constitutional treatment. Especially is this the case, when the difficulty is of an inflammatory or sub-inflammatory character. Under such circumstances, a large and freely suppurating surface, established as near the afflicted part as possible, unloads the turgid and enfeebled vessels, and enables them to resume a more healthy action. The following cases selected from many others, will

serve to illustrate this method of using issues, and demonstrate their usefulness as a means of depletion.

Case 1st. D. H., a man of robust constitution, temperate habits, and general good health, æt. 33, called on me in June 1842, to prescribe for the following symptoms,—constant and excessive headache, with a feeling of fullness, face not flushed nor the veins distended; on stooping, dizziness and tinnitus aurium common, so that he has immediately to resume the upright position for fear of falling. The disease has been gradually increasing during the last five years in its severity, in consequence of which he has been compelled to relinquish his trade, that of an iron moulder. The usual remedies have been had recourse to, viz. bleeding, general and local; blisters, purgatives, &c., with scarcely temporary relief. I advised a large issue to be made on the nape of the neck, which after some persuasion was consented to. The issue I made of an oval form nearly two inches long by one and a quarter wide. No other remedy was used, and no particular attention given to diet. In six days the slough separated, and the discharge was profuse, which continued for twenty days, when it gradually healed, leaving the head free from every uncomfortable feeling. There has been no return of the disease to this time, and my old patient has long since resumed his former occupation as a moulder.

Case 2d. M. S. came under my care in Jan. last. She is a tall well formed woman aged about 30 years, mother of three children: the youngest four years old. Has been an invalid for some years, but worse since the birth of her last child. The symptoms have been all this time much as they now are, only as they have varied in severity.

Symptoms.—Costiveness, want of appetite, frequent nausea and vomiting, irregular pains in the abdomen, slight leucorrhœa, menses irregular, and deficient as to quantity. The spinal column is tender on pressure from the sixth cervical to the last lumbar vertebræ; the third and fourth dorsal are particularly tender. The woman looks pale and feeble, but is yet able to sit up and can sew for a short time. During the long period of her sufferings she has been subjected to a variety of treatment, sometimes with temporary benefit. She has had no issue or seton inserted, but has used ungt. tart. ant., with blisters to the spine, and a host of internal remedies.

Treatment.—Jan. 15th. Three issues were made along the sides of the spinal column, one opposite the third dorsal, one opposite the twelfth dorsal, and one opposite the fifth lumbar vertebræ. The issues were each about two inches long and one and a half wide at the broadest part, and of an oval form. The following pills were exhibited, as a tonic, and to relieve costiveness. ℞, ext. colocynth. comp. ʒj. Ferri sulph. ℈j in pill. xx. One of the above to be taken morning and night. During the treatment some attention was given to diet, but her other habits remained the same. Jan. 25th, the sloughs of the issues have separated and the discharge is profuse, indeed the debility is increased thereby. The bowels move kindly now with one pill per day. The appetite is much improved, the stomach digesting easily the lighter articles of food. No diminution of spinal irritation. Directed ℥j of infus. gentian three times daily, and the pills to be continued, one per day.

Feb. 12th. Spinal tenderness very much diminished, appetite improving, bowels regular with one pill every other night, patient's look much improved, but her strength is not increased. Issues yet discharge freely, but are beginning to heal.

℞, carb. ferri gr. viij, three times a day, and discontinued infus. gent. and pills.

Feb. 25th. Issues nearly healed; spinal tenderness gone; strength much improved; all uneasiness and pain of abdominal organs gone; stomach digests ordinary food with facility; uterine function natural and leucorrhœa has ceased. Directed the patient to continue the use of the carb. ferri for two or three weeks twice per day. No further treatment. She has not since had any return of her old difficulties.

Case 3d. S. H., a young man of 23 years of age, has been in feeble health for a period of four years, occasionally tolerably comfortable for two or three weeks, and then suffering so severely as to require active treatment.

Symptoms.—Frequent desire to pass urine, which he says is often bloody, always albuminous when I have tested it, pain in the loins, particularly on the left side; frequent griping pains in the bowels and often mucus or bloody discharges from them. These symptoms are constant, and occasionally of such severity as to call for general bleeding, with large doses of opiates. The vertebræ are not tender under pressure. The constant use of opium gives Mr. H. the only respite which he

has from his disease. He is pale and much enfeebled, but is yet able to be "around." As usual in chronic cases this patient has tried everything and everybody, but with no more benefit than to relieve the exacerbations. I have treated him for two months with various internal remedies, and blisters and other revellants externally, without apparent benefit.

June 22d, 1846. Inserted two nitric acid issues, one over the left kidney near the spine, the other in the anterior superior part of the left iliac region. Discontinued all other remedies except the opiates. The issues were each full two inches long by one and a half, and of an oval shape.

June 30th. The issues are discharging freely, no alteration in symptoms.

July 23d. The issues have been open three weeks, and are commencing to heal. The patient is better in every respect. He now seldom rises more than twice or thrice at night to pass water, and much smaller quantities of opium than formerly now suffice to quiet the bowels: appetite and strength improved.

July 25th. Issues healed, no alteration in symptoms since the 23d.

August 6th. Re-opened issues at the request of Mr. H. He declares they have done more for him than all former remedies, and thinks they will effect a cure.

Aug. 25th. The issues have discharged properly for two weeks, and the patient thinks himself nearly free from disease. His strength has so much improved that he is able to perform light labor. The case is evidently doing well.

October 1st. The issues healed about 12th of September, leaving the patient apparently free from disease, except a slightly irritable condition of the rectum, as manifested by tenesmus, but without bloody or mucous discharge. He is now laboring on a farm.

The foregoing cases, which I have abbreviated so far as is consistent with a full understanding of them, seem to me fairly to exhibit the usefulness of the issue used as a means of depletion. The method of applying the nitric acid for the formation of issues is sufficiently simple. All the issues in these cases were made with pure nitric acid in the following manner. A small linen swab, or camel's hair pencil, is procured, with which the acid is painted on the part to be

destroyed; continue the application from six to eight minutes, varying with the thickness of the skin and the strength of the caustic. When the cutis becomes rigid from the coagulation of its albumen, so that it can no longer be raised in folds as usual, it is enough: the part is dead down to the sub-cutaneous tissue. It should always be carried thus far: the subsequent ulcer is then never painful. Immediately apply some alkaline solution to prevent further destruction of the parts, which it does by neutralizing the acid. The alkali should be applied for fifteen or twenty minutes; it is well then to apply a warm poultice to facilitate the separation of the eschar, and relieve any remaining inflammation of the part.

I am in the habit of dressing the issue with common adhesive plaster, spread on linen or strong paper. With this simple dressing frequently changed, I have never known a nitric acid issue become either painful or unhealthy.

The foregoing cases and remarks are offered because the utility of *large* issues seems to me not sufficiently regarded by the mass of the profession in this section of our country.

Aurora, Kane Co., Ill., Dec. 26, 1846.

ARTICLE VII.

In Camp, near Mon Clova, Mexico, November 5, 1846.

I am now writing in the vicinity of a Mexican town, containing about 5000 inhabitants, situated between, and nearly surrounded by, mountains.

The distance from San Antonio, Texas (the point where the column under General Wool was organized), is about 400 miles. We started from San Antonio the second day of October, and arrived here the 2d of November, thus making a march of thirty days without stopping.

This marching, day after day, so far into the interior of Mexico without meeting with any opposition, and with no prospect of a fight, causes a great deal of dissatisfaction, and is the subject of constant complaint with our Illinois Volunteers.

When on the march, we start in the morning by sunrise, go from 12 to 15 miles without halting, excepting for a short time now and then, and encamp for the rest of the day and

following night, generally about 11 o'clock, A. M. As I remarked in a former letter, we pass through all the towns in our way with drums beating and colors flying. In the towns of most importance we take formal possession, and plant the American Flag in the most public and conspicuous position.

A few miles from each town we have, in every instance so far, been met by the Alcalde, or ruler, with the principal men of the place, as a deputation from the citizens; and it is by means of such deputations that the people throughout this section of country, have unanimously, as I believe, expressed their determination to offer no opposition to our progress. In truth, it seems to be their wish, not only to remain neutral in the contest between the United States and their central government, but many of them openly express a desire to become separated from it, and a wish to form a republic of their own, or to come under the protection of that of the United States.

As an evidence of their oppressed condition, and to show from whence this feeling originates, it may be stated that, according to their representation, the Mexican army, in marching through their country, would live by robbing and plundering the inhabitants. The officers of ours, on the other hand, treat them as friends when they are friendly, and pay them fair prices for the means of subsistence.

With regard to the question, will it be good or bad policy to admit this portion of Mexico into the Union? intelligent men will of course differ in opinion. For my own part, I do not believe the Mexicans, as a mass, are, as yet, sufficiently far advanced in civilization and intelligence to admit of their establishing and sustaining a truly republican form of government; and therefore it would be not only bad policy, but dangerous, to endow them, at once, with the rights and privileges of citizens of the United States.

As examples of their barbarous customs, and tyrannical laws, the following may serve as specimens.

In many parts of the country matrimonial engagements are temporary merely: it being a common custom, as I am informed, for parties to agree to live together as man and wife for a few months only, at the end of which time either is at liberty to dissolve the compact. As an excuse for this demoralizing custom, they say that the Indians have, in many parts of the country, destroyed so many of the men, that there are to

every male inhabitant five or six females, and that unless such an indulgence be permitted, the population of their towns will rapidly diminish, and eventually become entirely extinct. Whether this be a sufficient reason or not for such an absurd and ridiculous custom, our readers can, for themselves, determine.

One example of their oppressive laws, and we are done for this time with Mexican institutions, and the character of the people.

In marching through this part of Mexico, we find the inhabitants, not scattered over the country as in the United States, but collected together, in towns from 20 to 50 miles apart, in the rich valleys between the mountains. We frequently meet with a collection of rude buildings surrounded by a wall, and inhabited by numerous slaves who, like the herds of cattle, and many square leagues of land in the vicinity, are owned by a single tyrant. An establishment of this kind is called by the Mexicans, a hacienda.

The slaves thus condemned to servitude and a life of bondage are not, like ours of the United States, marked by nature as a different race of beings from their masters, but in many cases, the Mexican slave is as well formed, physically, and is as intelligent as the tyrant who owns and governs him.

This being the case, the question naturally arises, why is it that people of the same race, not differing materially in natural endowments, are a few of them masters and the rest slaves?

This state of society results from a most tyrannical law, which provides that whenever one person becomes indebted to another, the debtor, unless he is able to make immediate payment, becomes at once the slave of the creditor, and is obliged to labor for him at a rate not exceeding 3 or 4 dollars per month, till the demand is cancelled. The amount earned, in this way, by the debtor, is often less than the sum required for his subsistence, consequently he is obliged to purchase on credit still more of his master, and thus to perpetuate a life of bondage.

The worst feature in this system of slavery for debts is, doubtless, that which provides for the perpetuation of this life of bondage; for it is not the debtor alone that is bound thus

to give up his liberty, but his children inherit his debts, and with them loose the rights of free men.

Having thus given a few hints concerning the customs and laws of the Mexicans, we will now proceed to the consideration of a subject which more immediately interests the people of Illinois, especially the medical men of our State.

Since joining the army, I have, for the most part of the time, been the only medical officer attached to the 1st regiment of Illinois Volunteers, and can of course speak with entire confidence, with regard to the diseases which have prevailed among the volunteers of this regiment.

On entering upon the duties of my office at Camp Crocket, near San Antonio, Texas, I found from 60 to 70 on the sick report. Of the cases thus reported, a majority were miasmatic fevers of a mild grade, which yielded readily to gentle laxatives and quinine, in doses of from 10 to 15 grains in the 24 hours.

This kind of treatment soon reduced the number of sick from 75 to 40, in a command of about 800 men. My experience, so far, in the army, with this class of diseases, has fully confirmed my belief in the utility of administering large doses of this most efficient remedy in miasmatic diseases. I have given it in all stages of these fevers, with uniform success, and without, at any time, producing unfavorable results. Diarrhœa is another disease very prevalent in the army; but, in most cases, it is of a mild form and yields readily to some mild mercurial, such as blue pill followed by, or combined with, opium and camphor. There are a few cases of a chronic form however, that do not yield so readily, but continue obstinately to debilitate the patients and produce emaciation. Many of these, I have no doubt, are dependent upon an ulcerated condition of the mucous membrane, whilst others perhaps result from torpid or diseased livers.

But of all the diseases to which the volunteers have been subject, those of the lungs consequent upon measles, have been the most destructive to life. From what I could learn of the diseases, previous to my joining my regiment, nine-tenths of those which proved fatal were of the lungs, and in all the cases, the patients had had measles whilst on the march, or in camp, in cold tents and sleeping upon the ground. To those acquainted with the progress of this cutaneous disease, and its tendency to produce lung affections under any

circumstances, it will not appear strange that it was the cause of fatal results in so many cases, nor will they be surprised to learn, that all kinds of treatment under the circumstances proved of little or no avail.

We are now on our march through the high lands of Mexico, where there are, probably, as few causes of disease, as in any section of the world. It is to be expected, therefore, that unless we get into a brush with the Mexicans, and as a consequence, have a few surgical cases, we shall have but little of professional interest to communicate. Still, we shall not let any opportunity pass, of giving to our readers interesting intelligence, whether it be of a professional or general nature.

WILLIAM B. HERRICK.

PART II.—REVIEWS.

ARTICLE VIII.

Adulterations of various Substances used in Medicine and the Arts, with the Means of Detecting them: intended as a Manual for the Physician, the Apothecary and the Artisan. By Lewis C. Beck, M.D., Prof. of Chemistry in Rutgers College, New Jersey, and in the Albany Medical College: Honorary Member of the Medical Society of the State of New York, etc. New York: Samuel S. & William Wood, No. 261 Pearl Street. 1846. pp. 333. 12mo.

This manual is intended to exhibit the adulterations of substances used in the arts, as well as in medicine; and the processes for detecting them are generally quite simple, and may be easily followed by those who have but a slight acquaintance with chemistry. The style of the work is plain; technicalities are as little used as could be expected, in a work of this kind, on which account it is useful to a larger proportion of readers than it otherwise would be.

This simplicity of style would appear to be the more necessary, as it is intended for others than medical men.

In an appendix is a full description of the chemical operations, noticed in the body of the work, directions for the preparations of re-agents, and several tables showing the behavior of some of the re-agents with the more important substances. This addition adds materially to the value of the work.

We will select from it some portions which treat of the more important medicinal agents, such as are in every day use by the practitioner. We will commence with Columba, an article which is frequently adulterated with other roots differing greatly from it in medicinal properties.

"Columba, U. S.—The root of the *Cocculus palmatus D. C.* (*Menispermum palmatum Lam.*), a native of Southern Africa. It is generally found in the shops in dried cylindrical slices, which have a thick yellow bark covered with an olive-colored skin, and a browner and spongy central portion. It is usually much worm eaten, and for use those pieces should be selected which are the least so. It ought to have a bright color. It is sometimes mixed with slices of bryony root, *Bryonia dioica*, a

most dangerous adulteration, consisting in the substitution of a drastic purgative for a grateful tonic. The fraud probably originated in a belief which once prevailed that columba was the root of the *Bryonia epigæa W.* which is said to resemble it in its properties.—(*Burnetts Outlines of Botany.*)

"Columba, when moistened and touched with tincture of iodine, should become blackish in consequence of the presence of starch. False columba presents no change of colour when treated in this manner. Pure columba gives no colour to sulphuric ether; false columba gives it a fine yellow.

"The root of the American columba, *Frasera Walteri Mich.*, is said to have been sold in some parts of Europe for the genuine, and perhaps the same thing has been done in this country. According to M. Stolze of Halle, it appears that while the tincture of columba remains unaffected by the sulphate or sesquichloride of iron and gives a dirty grey precipitate with tincture of galls, the tincture of frasera acquires a dark green with the former reagent, and is not affected by the latter."

"Mercury, Protochloride of.—*Hydrargyri Chloridum Mite, U. S.—Calomel.*—This compound, when obtained by sublimation, occurs in a white, fibrous, crystalline mass, studded with shining, transparent crystals, having the shape of quadrangular prisms. When finely powdered, it acquires a buff colour. As formed by precipitation, it is a white, tasteless, inodorous and insoluble powder. Its specific gravity is 7.20. When heated to redness, it rises in vapour without previous fusion. By a moderate heat it becomes yellow, but recovers its white colour on cooling. When rubbed with the alkalies, or alkaline earths, it becomes black, in consequence of the formation of protoxide.

"Through carelessness in its preparation, calomel sometimes contains corrosive sublimate. This may be detected by heating a portion of the suspected calomel with eight or ten times its bulk of alcohol, and then adding to the alcoholic liquor some solution of ammonia, which causes a white precipitate if corrosive sublimate is present. The presence of chalk may be ascertained by the effervescence which follows the addition of a very small quantity of very dilute muriatic acid, and the precipitate produced in the clear neutral solution by oxalate of ammonia. To determine whether this is not caused by white lead, which may also be used as an adulterant, pass a stream of sulphuretted hydrogen through the filtered muriatic solution, when, if lead is present, a black precipitate will be produced. After the separation of the sulphuret by filtration, the clear solution may be tested for lime in the manner already pointed out. Nitrate of mercury may be detected by digesting the calomel in dilute nitric acid, and then adding potassa, when a red precipitate will be produced.

"Calomel changes colour by exposure to the light; it should, therefore, be kept in a dark place, or in bottles painted black, or covered with black paper."

In addition to the foregoing we would add iodide of potassium, which when added to water in which calomel containing corrosive sublimate has been digested, produces a scarlet precipitate. Care should be taken not to add it in excess, as it will cause the precipitate to disappear, by forming a double soluble salt, in which the iodide of potassium acts the part of a base, and the biniodide of mercury that of an acid. This is a very striking and delicate test. We might also add that of nitrate of silver, a pure solution of which, if added to water, digested upon calomel containing corrosive sublimate, will produce a white precipitate of chloride of silver. This also is capable of detecting a very small quantity of the bichloride of mercury.

It is very important that physicians should obtain a pure article of calomel, and the more so, both on account of its frequent use, and the highly deleterious properties that might be communicated to it, by one of those agents with which it is liable to be adulterated.

"Mercury, Protoxide or Black Oxide of.—*Hydrargyri Oxidum Nigrum, U. S.*—A dark grey or nearly black powder, insoluble in water and yet having a metallic taste. Its specific gravity is 10,69. When pure, it is entirely soluble in acetic and nitric acids, and entirely insoluble in muriatic acid which forms with it water and calomel. By a strong heat it is completely dissipated, and metallic mercury is sublimed.

"Protoxide of mercury has a great tendency to resolve itself into peroxide of mercury and metallic mercury, and it is extremely difficult to procure it in a state of absolute purity. It is often adulterated, especially when in the form of the blue mass or of ointment, with lampblack, sulphur and other substances; and sometimes this ointment is almost wholly free from mercury. Such frauds may be detected by melting the ointment, or by warming it in very strong alcohol, or in ether, which dissolve the fat, and deposit the mercury, if present, or demonstrate the deficiency when absent.

"The blue mass is sometimes prepared with conserve of roses, to which sulphuric acid has been added to heighten the colour; and it then contains subsulphate of mercury, which possesses very irritating properties. The presence of this salt may be detected by triturating the mass with boiling water and adding to the filtered liquor a solution of nitrate of

baryta; if any sulphate be present, a white precipitate, insoluble in nitric acid, will be produced.

"If the protoxide of mercury is mixed with the peroxide, it may be detected by dissolving the suspected substance in muriatic acid and adding potassa to the filtered solution. A reddish or yellowish precipitate indicates the presence of peroxide. Oxalate of ammonia added to this solution will cause a white precipitate if the protoxide contains lime. Calomel, if present, may be detected by boiling the powder with a solution of potassa, which, when the solution is saturated with nitric acid, will give a precipitate of chloride of silver on the addition of the nitrate of that metal.

"The presence of metallic mercury may be detected by the protoxide not being completely soluble in acetic acid."

We will next notice the article of milk. The remarks in relation to it will be found more particularly useful to such as live in large towns and cities, and who are dependent upon others for their supply. The physician is also much interested in this matter, as, undoubtedly, in large towns many of the dieases of children are produced, and previously existing ones much agravated, by milk of a depraved quality.

"Milk.—In large cities, where the consumption of milk is very great, it is seldom exposed for sale without having received some fraudulent addition. Although these adulterations are not always positively injurious, they at least diminish those qualities which render milk so valuable an article of food. Many of the frauds praticed with it in Paris and other European cities, have probably never been here introduced: but there are some facts in regard to this liquid which deserve to be noticed in a work of this kind.

"Milk is a white opaque liquid, yielding about ten or twelve per cent. of solid matter on being evaporated to dryness by a steam heat. Its specific gravity is about 1,030. It is usually slightly acid, as may be seen by its reddening litmus paper; but occasionally it is an alkaline. When diluted with water it presents a bluish colour, instead of that dull white, which is characteristic of the pure substance.

"Various instruments have been invented for the purpose of determining in an easy and certain manner the comparative goodness of samples of milk. They are known by the names of *Lactometers*, *Creamometers*, *Galactometers*, and *Lactoscopes*. Some of these are similar in construction to the hydrometer, and their employment is founded upon the assumption that the specific gravity of milk is a true criterion of its richness and purity. But it is a serious objection to such instruments that the milk of different cows varies in its density, and that

the food, the age and state of health of the animal also effect considerable changes in this respect. It is this variation in the specific gravity of pure milk which renders it difficult to detect even considerable additions of water. From the researches of Lassaigne it appears that mixtures of milk and water, in which the proportion of the latter is less than one-fourth or one-third, have a density not sufficiently reduced below the *minimum standard* of pure milk, to be determined by the lactometer.

"The *Creamometer* consists of a glass tube about a foot long and half an inch in diameter, supported upon a foot. If milk is poured into such a tube and permitted to repose there, the cream which it contains rises to the surface and forms a cake, the bulk of which, when compared to the bulk of the milk, denotes the comparative goodness of the sample. The tube should be graduated into ten parts, and the two upper parts divided each into ten others. It is then easy to determine at a glance the *per centage* of cream contained in any sample of milk submitted to trial. It should be previously ascertained how many parts of cream are contained in one hundred parts of genuine new milk. Some hours are required to perform an experiment with this instrument, and this seems to be the principal objection to its general employment.

"Among the adulterations of milk that have been noticed, are the addition of flour of various kinds, starch, white and yolk of eggs, gum arabic, dextrine, emulsions of various seeds, chalk, plaster of Paris, bicarbonate of soda, and even the cerebral matter of the sheep. Many of these may be easily detected, as flour and starch, by the blue colour which they give on the addition of the tincture of iodine. The presence of eggs may be ascertained by filtering the milk and then boiling the filtered liquor, when flocks of albumen more or less abundant will be formed. Gum arabic, unless added in large quantity, has very little effect upon the density of milk, but such addition is too expensive to be advantageously practiced. The taste of dextrine is too disagreeable to be employed as an adulterant. Chalk and plaster of Paris, if used, will subside upon setting aside the milk and can be then detected by the appropriate tests.

"There is no doubt that these supposed adulterations have been greatly exaggerated, as most of the substances are easy of detection, and do not after all answer the purpose for which they are said to be employed. The frauds which are known to be extensively practised with milk, are the removal of the cream, dilution with water, and the addition of bicarbonate of soda to neutralize its acidity. I have already referred to the difficulty which attends the detection of water in milk unless added in the proportion of a fourth or a third part. The peculiar color of such diluted milk would be a good test, if it

were not that expert *manufacturers* add some coloring material, as annotto, the juice of the carrot, turmeric, &c., to conceal the change in this respect. The presence of bicarbonate of soda may be ascertained by its effervescence on the addition of an acid, as it is generally added in excess. Cases are referred to in which this salt has been used in such quantity as to cause the death of children who have used milk thus adulterated.—(*Garnier and Harel, Des Falsifi. des Subs. Alimentaires.*)

"But the deterioration which milk suffers from other causes is equally worthy of consideration. I refer to the effects produced upon this liquid by the different influences to which the animal is subjected, as food, state of health, fatigue, &c. It is well known that various articles eaten by cows pass rapidly into the circulation and can be detected in the milk. Thus, milk has a yellow colour when cows eat the marsh marigold (*Caltha palustris*); a bitter taste, when they eat wormwood; and the strong taste and colour of garlick, when they pasture in fields where this plant is abundant. The purity and healthfulness of milk must, therefore, depend very greatly upon the food with which cows are supplied. The diseases of these animals, whether induced by improper food or otherwise, must also have an important influence upon the quality of their milk. The remarkable milk sickness of the Western States affords a stiking illustration of the correctness of these statements. It is not without reason, therefore, that the great mortality among children in Paris is ascribed chiefly to the bad quality of the milk with which such a large number are constantly fed. It is said that the cows whose milk is intended for infants, are kept in close and warm stables, for the purpose of increasing the quantity of the liquid. But tubercles have been found in the lungs of almost all these cows in Paris and its vicinity.—(*Garnier and Harel.*)"

"Nitrous or Hyponitrous Ether.—*Sweet Spirit of Nitre*, (*Spiritus Ætheri Nitrici, U. S.*,) is a mixture of nitrous ether and alcohol in variable proportions. It is a colourless volatile liquid, with a fragrant ethereal odour and a pungent, aromatic, sweetish taste. It boils at about 160°, is very inflammable and burns with a whitish flame. Its specific gravity is 0.834 U. S., to 0.847 Ed. It generally reddens litmus slightly, but when perfectly pure should be without any acid reaction, and should volatilize without leaving the slightest residue.

"This article is very extensively adulterated. Wholesale dealers usually keep two, or even three, qualities of this preparation; the inferior ones being obtained by diluting the best with different quantities of water, or spirit of wine and water. 'Some years since large quantities of spirit of wine, flavored with hyponitrous ether, were imported into London, under the

name of spirit of nitric ether, in order to avoid the duty payable on it as spirit of wine.'—(*Pereira.*) The extent of this mixture can sometimes be determined by its specific gravity, but at others it is a fallacious criterion.

"Sweet spirit of nitre often contains acetic acid or some of the acids of nitrogen in such quantity, as to redden litmus strongly and to cause an effervescence when added to carbonate of potassa. If a deep olive colour is produced with the protosulphate of iron, it indicates the presence of a nitrogen acid. The presence of these acids increases the specific gravity of the sweet spirits of nitre; but the addition of hyponitrous ether produces the same effect. A specific gravity lower than the U. S. standard would probably show that the alcohol is stronger than it should be, and either in the proper amount or in too large proportion.

"When the specific gravity of sweet spirit of nitre is as high as that assigned by the Edinburgh College, the fraudulent addition of water and alcohol may be detected by agitating it with twice its volume of concentrated solution of chloride of calcium. If the article is of full strength, twelve per cent. of ether will slowly separate, which is twelve twentieths of the quantity present. If less ether separates, it shows the presence of too much water and alcohol. This test, however, is said not to be applicable to the U. S. preparation.—(*U. S. Dispensatory.*)"

"Opium.—*Opium, U. S.*—This is the name given to the inspissated juice which flows from incisions made in the unripe capsules of the *Papaver somniferum L.* It is only effectively obtained in warm climates, and the chief supply is procured from Turkey and India. It is a very heterogeneous compound, consisting of at least a dozen proximate principles, of which the most important are, *Morphine, Narcotine* and *Codeine.*

"Several varieties of this drug are described by writers on the Materia Medica. Our market, however, is almost exclusively supplied with the *Turkey Opium*, which is chiefly shipped from the port of Smyrna, and hence often called *Smyrna Opium.* It occurs in irregular masses, more or less flattened, covered with pieces of the dried leaves and with the reddish winged capsules of some species of *Rumex*, and sometimes also with poppy leaves. It has a rich reddish brown or fawn colour, a waxy lustre when cut, a tough consistence and a tolerably compact texture. Its odour is heavy, strong and narcotic; its taste bitter, arid and nauseous.

"There is no article in which frauds have been more extensively practiced than in opium. Even the Turkey opium, the best kind in market, one-fourth part generally consists of impurities. Among the substances employed as adulterants

are, the extracts of the poppy, lettuce, and liquorice, gum Arabic, gum tragacanth, aloes, the seeds of different plants, sand, ashes, small stones and pieces of lead. An Armenian, who had been for many years engaged in the extraction of opium, informed Mr. Landerer, of Athens, that not a single cake of opium comes from the East without having been mixed in the soft and fresh state with grapes freed from their seeds and crushed. Another adulteration was said to consist of the epidermis of the capsules and stalks of the poppy, pounded in a mortar, and mixed with white of egg.—(*The Chemist, Sept.*, 1843.) Some samples of opium, also, which are apparently pure, are found to be totally destitute of the active principle of the drug.

"It is by no means easy, except by actual trial upon the system, to determine the quality of a sample of opium. The proportion of water may be judged of by the consistence, or, more accurately, by the loss on drying of a given weight of the drug. Many of the other impurities may be detected by a careful inspection. But the only certain test of the goodness of opium is to ascertain the proportion of morphine which it contains. This can only be accurately done by carefully following out some of the processes for the preparation of morphine. A pound of good opium should yield about a sixteenth of its weight of this alkali.—(See *Graham's Chemistry.*)"

"Peruvian Bark.—Under this general term are included the barks of various species of *Cinchona*, among which may be enumerated, as those of most frequent occurrence in market, the *Cinchona Calisaya*, or *Yellow bark*, *Cinchona rubra*, or *Red bark*, and the *Cinchona corona*, or *Pale bark*. Besides these there are several other kinds, but there is still much uncertainty in regard to their true botanical characters. It is well known, however, that their medicinal powers depend upon the alkaline principles which they contain. The most remarkable of these is *Quinine* or *Quinia*, the salts of which have almost entirely superceded the use of the powdered barks. Of this active principle the different varieties of Cinchona are known to yield very different proportions, and upon this circumstance their relative value depends.

"The frauds that are practiced with reference to Cinchona bark principally consist in the substitution of the inferior true barks for the finer kinds; the admixture of bark which has been exhausted by successive macerations and then dried, with good bark; and the substitution of spurious Cinchona barks for the true one. Of the false barks, three in particular have been described, viz: Piton bark, Caribean bark and Pitaya bark. They have all a disagreeable, bitter taste, not aromatic. The other adulterations, however, are very diffi-

cult of detection, as it is almost impossible to judge of the quality of bark (especially if in powder) by its physical properties. The quality of the yellow bark is best determined by the proportion of quinine which it yields. As the process employed is difficult of application on a small scale, the Edinburgh College has given the following test, by which the greater part of the alkali contained in a sample can be readily procured in an impure state: A filtered decoction of one hundred grains in two fluid ounces of distilled water gives, with one ounce of concentrated solution of carbonate of soda, a precipitate, which, when heated in the fluid, becomes a fused mass, weighing when cold two grains or more, and easily soluble in solution of oxalic acid. Manufacturers of disulphate of quinine generally, however, employ the test proposed by Guibourt, by which the quantity of lime contained in a sample is determined, it having been ascertained that those barks which are most rich in quinine also contain most lime. The process is as follows: 'Mix the bark in fine powder with water so as to form it into a fine paste; place this on paper, filter and add sulphate of soda to the filtered liquor as long as the white sulphate of lime is precipitated.'—(*Neligan.*)"

In addition to the above we would add that of tannic acid which has a powerful affinity for the vegetable alkalies, and when added to an infusion of bark, containing kinate of quinine in solution, it immediately unites with the alkali, forming an insoluble tennate, which forms a copious flocculent precipitate. If this is not produced the bark may be considered as destitute of quinine. This is a very delicate test, and can be easily applied by any person.

"QUININE OR QUINIA.—This is one of the vegeto-alkalies usually obtained from the yellow bark, *Cinchona Cordifolia Mut.* When pure, it occurs in white needle-form crystals, which are intensely bitter, soluble in 200 parts boiling water, almost insoluble in cold water, and highly soluble in alcohol and ether. It forms salts with acids, which are generally crystallizable. It is not used in its uncombined form. It is liable to be mixed with cinchonine, for which the tests will be found in the next article.

"QUININE, DISULPHATE OF.—*Quiniæ Sulphas, U. S.—Sulphate or Subsulphate of Quinine.*—This salt, which is now largely manufactured, crystallizes in delicate white needles, which are very light and have the appearance of amianthus. It is efflorescent, intensely bitter, requires about 740 parts of cold, and 30 parts of boiling, water for solution. It is soluble in 60 parts of cold alcohol, but in much less of hot. Very

soluble in dilute sulphuric acid. It possesses the remarkable property of becoming luminous when heated a little above the boiling point of water, especially when rubbed.

"In consequence of the value of this salt it is often adulterated with various substances, as sugar, gum, starch, stearine, ammoniacal salts, sulphates of lime and magnesia, salicine and cinchonine.

"*Detection of Sugar, Gum and Starch.*—Sugar may be detected by dissolving the suspected salt in water, and adding precisely so much carbonate of potassa as will precipitate the quinine. The sugar may be separated by evaporating the filtered solution to dryness, and dissolving the residue by boiling alcohol. Gum and starch are left when the impure disulphate of quinine is digested in strong alcohol.

"*Detection of Ammoniacal and Earthy Salts.*—If ammoniacal salts are mixed with the disulphate of quinine, the fraud may be detected by the odour of ammonia which is given out when the mixture is put in a strong solution of potassa. And if the suspected disulphate is subjected to a red heat in a platinum spoon, the residue, if any, consists of earthy matters, the precise nature of which may, if necessary, be determined by subsequent trials.

"*Detection of Stearine.*—The presence of stearine may be ascertained by treating the suspected disulphate of quinine with water acidulated with muriatic acid. The disulphate is dissolved, but not the stearine. If the mixture is heated, the stearine swims on the surface of the liquor, and forms little transparent drops, which become opaque when the liquor cools.

"*Detection of Salicine.*—Recently, disulphate of quinine has been largely adulterated with salicine. The presence of this substance, when in considerable proportion, can be easily detected by the addition of sulphuric acid, which produces a fine red colour, while with the disulphate this acid forms a colourless solution. Where only a small proportion of salicine is mixed with the disulphate the following process may be employed: Pour on two parts of the disulphate twelve parts of concentrated sulphuric acid. The salt will be dissolved and coloured brown. Add 250 parts of distilled water; the brown colour disappears, and the salicine remains white and suspended in the liquid. The salicine is not dissolved by this acid solution of sulphate of quinine. Filter and collect on a glass, and the white bitter powder will give, with cold concentrated sulpuric acid, the vivid red reaction. The water should be added in small quantities at a time, and we should cease to add it when a precipitate is obtained which separates with facility.

"*Detection of Cinchonine.*—The samples of disulphate of quinine are now rarely free from the corresponding salt of

cinchonine. Various processes have been suggested for the detection of the mixture. One of these depends upon the different action of chlorine upon the salts of quinine and cinchonine. If the disulphate of quinine be dissolved in a large quantity of chlorine water, and some water of ammonia is added, a deep green precipitate is formed, and the liquor also becomes intensely green. A salt of cinchonine similarly treated forms a dark red solution. Another mode consists in dissolving a portion of the mixed salt in water, and precipitating the solution with ammonia, collecting the precipitate, and boiling it in alcohol. If any cinchonine is present, it will be deposited in crystals as the liquor cools, while the sulphate of quinine remains in the mother liquor. According to M. Calvert, a saturated solution of disulphate of quinine in cold water gives, with a solution of chloride of lime, a precipitate, soluble in an excess of the latter; while a solution of sulphate of cinchonine of the same strength, treated in the same manner, gives a precipitate which is insoluble in a great excess of the reagent. The same effect is produced with lime water and solution of ammonia; and solution of chloride of calcium, while it furnishes a precipitate with a solution of sulphate of cinchonine, yields none with a solution of disulphate of quinine. For other distinctive characters of quinine and cinchonine, and their salts, see *Pereira's Materia Medica.*

"It should be added that the disulphate of quinine sometimes contains water in such an undue proportion as to constitute an adulteration. This is the case if one hundred parts of the salt lose more than eight or ten parts of their weight by the application of a gentle heat. Finally, to complete the catalogue of frauds, the bottles which come to us from France, purporting to contain an ounce of the disulphate, very rarely yield that amount; the reduction of weight being either the result of an understanding between the manufacturers and the wholesale dealers, or of the direct removal of a portion of the salt after it has been brought into this country."

"Silver, Nitrate of.—*Argenti Nitras, U. S.*—This salt, when pure, is in the form of white, tabular crystals, which ought to remain dry in the air, and when in a dry state ought not to blacken by exposure to the light. When heated on charcoal it deflagrates. It is soluble in its own weight of cold, and in half its weight of boiling, water. Upon adding muriatic acid to the solution, an abundant white precipitate is produced, which darkens by exposure to the light, is insoluble in nitric acid, but entirely soluble in ammonia.

"The *fused* nitrate of silver, or *Lunar Caustic*, is prepared by fusing the pure salt, and pouring it into heated moulds. In this state it should have the appearance of a grey or nearly white crystalline mass. It is usually, however, of a blackish

colour, owing either to carelessness in the manufacture, or to the presence of organic matter, which under the influence of light causes a reduction of a portion of silver.

"Nitrate of silver is often largely adulterated. Thus it contains free silver from having been exposed to too high a heat, the nitrates of lead and copper, from the impurity of the silver used in its preparation, and chloride of silver from that of the acid. From fraudulent admixture, also, it is sometimes contaminated with nitrate of potassa.

"*Detection of Free Silver and Chloride of Silver.*—Dissolve the suspected lunar caustic in about its own weight of water. If it leaves more than a very slight dark residue, it contains either free silver or the chloride of silver. Add ammonia to this residue; the chloride of silver will be dissolved, while the free silver remains. From the ammoniacal solution the chloride may again be obtained by evaporation, and its amount determined. The free silver which remains after the separation of the chloride, may be dissolved in nitric acid and converted into a chloride by the addition of muriatic acid. Should any oxide of copper be contained in the insoluble residue, its presence will be detected by the blue colour caused on the addition of ammonia.

"*Detection of Nitrates of Copper and Lead.*—Dissolve a known quantity of the suspected nitrate in a large quantity of water, and after having separated the insoluble matter by filtration, add muriatic acid. All the silver will be thrown down as an insoluble chloride, while the chlorides of copper and lead, if the quantity of water is sufficiently large, will be held in solution. Filter the liquid, and then add sulphuric acid; if any lead is present an insoluble sulphate of lead will be formed. From the filtered solution copper may be precipitated, if present, as deutoxide, by caustic potassa. The precautions which are required to effect this separation are described in the article SILVER.

"*Detection of Nitrate of Potassa.*—To detect this salt, lunar caustic is to be dissolved in water, and the solution precipitated by muriatic acid as in the process for the detection of the metallic nitrates. The filtered solution is then to be neutralized with ammonia and treated with sulphuretted hydrogen to separate any metals that may be present. The filtered solution, if it contains nitre, will, on evaporation, leave a salt easily recognized by its properties as a nitrate. If thrown upon burning coals it will deflagrate and leave a fixed residue.

"By operating upon a given weight of lunar caustic the proportions of the above adulterants may be easily determined. The real value of any sample may be accurately ascertained by dissolving it in water, precipitating it by muriatic acid, and determining the proportion of pure nitrate of silver by the weight of the dried and slightly heated chloride of sil-

ver. 100 parts of the nitrate of silver should give nearly 85 of the chloride of silver. An American dollar will yield nearly one ounce and a quarter of pure nitrate of silver."

We will next notice what he says in relation to wine, an article that is largely adulterated. When pure it may frequently be used as a medicinal agent, with much benefit; but as generally found in market, it cannot be depended upon, for which reason, it is not ordered as much as it otherwise would be.

"Wine.—*Vinum, U. S.*—Wine is a transparent liquid, of a yellowish, reddish yellow, or deep red colour. It consists principally of water and alcohol; but a great number of other substances are also found in it, as sugar, fecula, gluten, extractive, colouring matter, tannic acid, bitartrate of potassa, tartrate of lime, volatile oil, œnanthic ether, &c. It is upon the volatile oil that the peculiar taste and odour of wine, called the *bouquet*, is supposed to depend. The proportions of the ingredients vary greatly in the different kinds of wine. Tannic acid and colouring matter are in larger quantity in the red wines than in the white, while the alcohol ranges from nine or ten to twenty-five per cent.

"Numerous frauds are practiced with wine, and it is to be regretted that chemistry does not yet furnish the means of detecting them with all certainty. The most common of these are the mixture of wines of different vintages, and the addition of water, of brandy, of colouring matters, and of various saline substances.

"*Colouring Matters.*—The colour of red wines is due to the skins of the red raisins, with which the *must* is fermented. These wines also derive from this source the tannic acid to which they owe their astringent taste and their change from a red to a brownish black colour, upon the addition of a soluble persalt of iron.

"Among the substances said to be used for the purpose of giving a red colour to wines, are logwood, Brazil-wood, beet root, and the fruit of the elder and of the sloe. The process most to be relied on for determining their presence is that of Nees d'Esenbeck. It consists in dissolving one part of alum in eleven parts of distilled water, and one part of carbonate of potassa in eight parts of water. The suspected wine is mixed with an equal volume of the solution of alum, which renders its colour more brilliant; to this mixture the alkaline solution is then added, little by little, taking care not to decompose all the alum. The alumina is precipitated with the colouring matter of the wine in the form of a lake, which, both before and after the addition of the potassa, assumes tints

which vary with the nature of the colouring matter. In pure wine the solution of alum produces a lake of a dirty grey colour, which an excess of the alkali partly dissolves, leaving the residue of an ash grey colour. If the wine has been coloured by any of the substances above mentioned, the precipitate left, after following out this process, is some shade of blue, violet, or rose.

"*Detection of Carbonates.*—The carbonates of lime, potassa and soda are sometimes employed to neutralize the acidity of certain wines. The first of these may be detected by evaporating a portion of the wine to about one-eighth its volume and adding to the residue twice its volume of alcohol of sp. gr. 0.921. By this means the sulphate and tartrate of lime, which naturally exist in the wine, are precipitated, and the acetate of lime dissolved. The solution is then filtered, and carefully evaporated to dryness. The filtered solution of this residue in water gives an abundant white precipitate with oxalate of ammonia, and evolves the odour of vinegar when decomposed by sulphuric acid.

"Carbonate of potassa is sometimes added to wine for the purpose of stopping the fermentation and of saturating the acetic acid which it may contain in excess. In this case acetate of potassa will exist in the wine. To determine the presence of this salt, evaporate a portion of the wine to a syrupy consistence and agitate the residue for some minutes with a small quantity of alcohol of the sp. gr. of about 0.842; upon the application of heat the acetate of potassa will be dissolved. The liquid after filtration is divided into two parts: the one is treated with a solution of the chloride of platinum, which gives with potassa a yellowish precipitate; the other is evaporated to dryness and the residue moistened with strong sulphuric acid, which liberates acetic acid, known by its peculiar odour. It should be stated that pure wine always contains acetate of potassa, but the quantity is so minute that these tests produce it with scarcely perceptible results.

"When wine is saturated with carbonate of soda, the tests employed for acetate of potassa give only negative results. In this case, the residue of the evaporation should be treated with alcohol of the sp. gr. of 0.920, which dissolves the acetate of soda. This solution is then evaporated, the residue dissolved in water, the solution filtered and slowly evaporated. If acetate of soda is present, crystals will be formed which have a sharp and slightly bitter taste, and are decomposed by strong sulphuric acid.

"*Detection of Lead.*—The addition of white lead or litharge to sour wines, to neutralize their acidity and to render them sweet, was formerly often practised, but is now rarely resorted to. The presence of lead in wine may be detected as follows: Evaporate a portion of the suspected liquor to dryness

in a Berlin ware capsule, collect the dry residue and heat it to redness. Triturate the coaly mass with twice its weight of nitrate of potassa, and throw the mixture, a little at a time, into a small porcelain crucible heated to redness. The nitrate of potassa causes the combustion of the charcoal, and a fused mass, which contains the lead, remains. If the matter retains a deep brown colour, the ignition may be repeated with another portion of the nitrate. The residue is then treated with water acidulated with nitric acid, until it is completely dissolved. This solution is then filtered, and if it contains a salt of lead it will give a white precipitate on the addition of a few drops of sulphuric acid; a yellow precipitate with solution of chromate of potassa; and a black precipitate with sulphuretted hydrogen or hydrosulphuret of ammonia.

"*Detection of Alum.*—Alum is sometimes added to wine for the purpose of heightening its colour and of giving it an astringent taste. If the wine is red, mix it with a sufficient quantity of animal charcoal previously well washed with muriatic acid. When it has been deprived of its colour, filter, evaporate the filtered liquor to one-third of its volume, and then filter it a second time to remove the coloured precipitate which has been formed during the evaporation. If alum is present, the solution will have an astringent taste, and will give, upon the addition of potassa, a white precipitate soluble in an excess of the alkali; it will also cause, with chloride of barium, a dense white precipitate, insoluble in nitric acid.

"*Detection of Brandy.*—The addition of brandy to poor wines is often practised for the purpose of giving them the more strength to resist decomposition. If the proportion of brandy is large, and the mixture recent, its presence can sometimes be detected by its deflagration when thrown into the fire; but when the mixture is of long standing, this test is of no use. The proportion of alcohol in wine can be determined by distillation, but we have no means of distinguishing that which belongs naturally to the wine from that which has been added as an adulterant."

J. McL.

ARTICLE IX.

An Anatomical description of the Diseases of the Organs of Circulation and Respiration. By CHARLES EDWARD HASSE, Professor of Pathology and Clinical Medicine in the University of Zurich, etc. etc. Translated and edited by E. W. SWAYNE, M.D., Physician Extraordinary to H. R. H. the Dutchess of Kent. Philadelphia: Lee & Blanchard. 1846. pp. 277. 8vo. (From the Publishers.)

Pathological Anatomy is the only sure foundation upon

which those important parts of the fabric of medical science, diagnosis and pathology can rest. If there are any who doubt its value, it must be from not having sufficiently reflected upon the history of medicine, or noticed with attention the obstacles that have most opposed its progress. The earlier medical writers excelled in minute observation and description of symptoms. They sketched the portrait of disease with a master's hand, but for want of a knowledge of the changes which the organs undergo, their descriptions are comparatively useless at the present day. How are we to know whether the cases they describe as consumption were not bronchitis? What assurance have we that their typhus fevers of old persons, and occurring in winter, were not pneumonias? Certainly none whatever; and this fact is so well known that recent authors have found former observations so little to be depended upon, that they have determined to reject them altogether, and commence anew the acquisition of facts which may be relied upon as authentic. We have but to look at those departments of medical science in which much progress has been made, and the services rendered by pathological anatomy will be apparent.

Diseases of the brain, of the heart, inflammation of the veins, and many others of obscure character, have been rendered familiar by post mortem examinations. By the term pathological anatomy we do not mean simply the changes left in an organ by disease which has resulted fatally, but a history of the changes of structure which an organ undergoes during the progress of the malady—in other words, an *anatomical* history of disease.

Such is the view of our author, who possesses ample knowledge and means for doing justice to the subject, having for a length of time pursued his researches at Paris, in a school which numbers among its teachers such names as Andral and Louis. This work, without being a compilation, embraces the most important outlines of the science as developed by others, but in several chapters exhibits originality, and in others a candid and thorough criticism which mark a superior mind. We shall not attempt to follow him through his description of the lesions of the circulating and respiratory organs, but prefer to give, as samples of the work, a few extracts, selecting such as from their originality possess public interest.

Of this kind will be found the following section upon an obscure affection.

"A product of inflammatory action deserving of notice here, are the *fibrinous coagula* occurring within the cavities of the heart. Formerly much importance was attached to these so-termed polypi of the heart, and no small disposition was evinced to regard them, not only as the immediate agent of death, but likewise as the main source of many chronic diseases of the respiratory and circulating organs. Pasta combated this extravagant notion, but went too far in asserting that every polypoid formation within the heart was the result of stagnation of the blood after death, and that even fibrinous depositions within aneurismal sacs were impossible during life. Afterwards, when organic diseases of the heart were more minutely studied, fibrinous coagula became the subject of repeated research, and it is Kreysig's merit to have shown that, although they could not be looked upon as either the cause or the produce of chronic disease, they yet might be the result of an inflammatory process affecting the inner surface of the heart; in short, that a polypous carditis must be recognized. Bouillard arrives at the same conclusions, but, on the other hand, perhaps assigned undue weight to endocarditis in the production of polypi.

"Of the blood coagula, two types are commonly acknowledged, the distinctions between which are essential and obvious; there are, however, so many transition-forms, that it is often extremely difficult to come to a definite conclusion. The first type is characterized by the simple fibrinous clot, so common in robust individuals. It is yellow, pellucid, of the elasticity of jelly, of a smooth shining surface, and fashioned to the shape of the heart's cavities, especially at the origin of the pulmonary artery, where it often appears moulded with a faint impression of the valves, It seldom fills the cavities however, and never adheres to their parietes. This gelatino-fibrinous mass occasionally covers a clot of coagulated blood, in the same proportion as the buffy coat the crassamentum in blood drawn from a vein; it, however, frequently constitutes the bulk of the concrement, and contains only a few portions striated or dotted blood-red. Polypi of this description, often proceeding with flattened ends into the large vessels, and being usually of greater volume in the right half of the heart than in the left, are developed during the agony, or after death; but result, in no instance, from disease of the encardium. The second type of polypoid coagula is characterized by opaque, white or dingy-grey, soft, filamentous and elastic concrements, consisting of several irregularly superimposed layers with an uneven surface more or less firmly adherent, especially in the neighborhood of the valves, to the heart's

parietes, and insinuating their fangs among the columnæ carneæ and tendinous cords. They rarely form a single coherent mass like the foregoing species, but rather unequal and distinct accumulations, connected together through the medium of coagulated blood, or else of a brown or grey pultaceous substance. In rare instances, several of the fibrinous layers include in their centre purulent fluid. At their surface, and even between the different layers, dots and little stripes of blood are discernible. The majority of these coagula are developed during life, and are frequently the *immediate cause* of death. Bouillaud regards them as products of an inflammatory process affecting the encardium, and as being partly secreted by this membrane, partly deposited by the blood while passing over the inflamed parts.

"An unbiased survey of the cases in which these polypi occur, will render it apparent that their development does not necessarily depend on inflammation of the encardium, but that the seat of the morbid action is often, nay, in the majority of instances, remote from the heart. In proving this, the fact should be borne in mind, that certain substances when brought in contact with the blood cause its coagulation, and this the more rapidly, the larger the amount of blood experimented upon, and the more briskly they are agitated and mingled with it. According to the experience of most pathologists, such substances are met with in the blood itself,—tubercle, for instance, cancerous matter, and more frequently pus, which last is particularly efficient in promoting coagulation. These entering the circulation by degrees, will not fail, at whatever part of the body engendered, to accumulate eventually within the cavities of the heart. For it is well known that the ventricles do not empty themselves completely during systole, but retain a small portion of blood; this, being by the shock of the heart's contraction impelled into the network of the columnæ carneæ, acquires there, under the circumstances above indicated, the opportunity to coagulate; the same relations subsisting, the coagula, at first small, gradually increases in bulk, so as eventually to impede, and ultimately to obstruct the circulation, and after death to present a fibrinous concrement of the character last described. It follows from the foregoing explanation, that even those polypi which contain fluid pus, are not necessarily the product of endocarditis."

"CYANOSIS. MORBUS CŒRULEUS.

"Of late years it has been very generally admitted that the cyanotic state is not symptomatic of one, but of various diseases, both of the lungs and heart. Nevertheless, for brevity's sake, we shall here use the term *cyanosis* in its older and

familiar acceptation, namely, as denoting a preternatural communication between the right and left compartments of the heart.

"This morbid condition is for the most part dependent upon congenital malformation: as such, however, it is (as clearly demonstrated by J. F. Meckel) not to be regarded as merely accidental, but as subject to the same laws which govern the normal development of the organism.

"A preternatural communication between the two chambers of the heart, and the commingling of arterial and venous blood sometimes consequent thereupon, occurs under a great variety of circumstances. In the following pages, however, our attention will be devoted almost exclusively to those forms in which life is capable of considerable prolongation subsequently to birth.

"The first in importance is an unclosed state of the foramen ovale,—a malformation not only the most frequent of those we have to consider, but at the same time almost invariably a complication of all the rest. Incomplete closure of this aperture, admitting, through an orifice at its margin, the passage of a probe or of the handle of a scalpel, in short, imperfect *valvula foraminis ovalis*, is very often unattended by cyanotic symptoms. Out of 155 individuals, none of whom had manifested any such symptoms, Bizot found the foramen ovale more or less open in 44 instances.

"Where, however, the aperture remains destitute of either a sufficient muscular plug, or an adequate valve, secondary disease of the heart, eventually productive of permanent, or at least of fleeting symptoms of cyanosis, has been invariably known to follow. The marginal edges of the unclosed *foramen ovale* are partly tendinous, partly muscular, sometimes of almost callous hardness. In certain instances the valve or the fleshy plug is variously perforated, the width of the aperture varying from 1½ to 15 Parisian lines.

"The permanence of *Botalli's duct* appears to be rare, and always coincident with unclosed foramen ovale, and with perforation of the septum of the ventricles.

"*A communication between the ventricles*, through an aperture in their septum, may coexist with closure of the foramen ovale, and is sooner or later productive of a cyanotic state. Louis has collected 5 cases of the kind (one, that by Jackson, of the English General Whiple); in a sixth related by Otto (Neue seltene Beobacht, p. 49) of a girl aged 12½, the right ankle was wanting, and the veins of the trunk opened at once into the right ventricle. Perforation of the ventricular septum is more frequently observed in common with a patulous state of the foramen ovale and of Botalli's duct; for example, in the instance so often cited from Richerand's 'Physiology,' of a man aged 40, or in Nasse's interesting case of a girl aged 19

(Leichenöffnungen, p. 162). The aperture in the ventricular septum is mostly situate near the base of the heart, immediately below the origin of the pulmonary artery and aorta; sometimes, however, nearer the apex of the heart, as in Otto's case. This corroborates the opinion of Albert, that the perforation is nearer to the base when the foramen ovale is open, and nearer to the apex when it is closed. The communication between the two ventricles is sometimes direct, sometimes oblique,—duct-like. In the case of a child 13 years old, I once found it crossed by a tendinous band. Its borders are mostly smooth, consisting of fleshy columns: but occasionally, too, of tendinous or cartilaginous hardness. In the cases recorded, the width varies from 2 to 12 lines; it may, however, amount to partial (Bouillaud,—in a child of 4 years) or almost entire (Burdach,—in a youth of 16) deficiency of the ventricular septum.

"The cardiac origen of the great arteries, is liable in like manner to many anomalies, all attended with malformations of other kinds within the heart, mostly proving fatal at an early period under the symptoms of cyanosis, and seldom compatible with prolonged life. In five cases collected by Albers, the pulmonary artery sprung from the left, the aorta from the right ventricle; in all, death ensued within a few months after birth; the two eldest of the children having respectively attained the age of three (Albers) and five (Farre) months. An interesting case is related by Martin, (Müller's Arch. 1839, fasc. 3, p. 222,) in which death occurred after the tenth week. In this state mixed blood circulates, occasioned by the open condition either of the foramen ovale, or of Botalli's duct, or else by an aperture in the ventricular septum.—In two cases of Farre's, (an infant of three weeks, and a male child of eight months,) the pulmonary artery arose from both ventricles. The proper aorta gave off the arteries of the head and of the upper extremities only, and united by a thin branch with the descending aorta, which was derived from the pulmonary artery, beyond the point where the latter sent off its branches to the lungs. The origin of the aorta from both ventricles has been more frequently observed. In seven instances (Louis, Albers, Bouillaud, and Meyer) life was long protracted. The most remarkable examples are, of a girl of 9 years (Cerutti), a boy of 13 (Sandifort), a girl of 17 (Albers), and a woman of 25 (Tommasini); a girl of 17, admirably described by Meyer (Rust's Magazine, vol. lv. fasc. 1, p. 158). In this malformation the pulmonary artery is mostly very narrow, and its semi-lunar valves, like those of the aorta, are either partial or wholly wanting, being faultily fashioned, or rudimental only.

"Are the preternatural communications between the right and left divisions of the heart, just described as the source of

cyanosis, always to be regarded as *congenital* malformations? Louis answers this question in the affirmative, and as far as concerns the anormal origin of the great arteries, the coincidence of perforation of the heart's walls with a pervious state of Botalli's duct, and with other malformations acknowledged to be congenital, the thing is indisputable.

"It is otherwise, however, with respect to simple perforation of the ventricular or auricular septa. Bouillaud holds these to be in part the result of ulcerous destruction of the muscular substance with subsequent cicatrization, and refers in particular to a case of Thibert, in which the edges of a perforation of the ventricular septum, in a man aged 24, were furnished with a yellowish membranous fringe. There is, however, no mention made of softening of the vicinity, or of other changes of the encardium, usual in ulcer of the heart; moreover, the foramen ovale was open, and precisely in the condition it was wont to be found in a malformation obviously congenital. Meckel and Abernethy believe in the possibility of the foramen ovale *reopening* in advanced age,—especially in disease of the lung. Otto, who seems of the same opinion, adduces 13 cases of dropsical accumulation within the pleural sacs, with strong adhesion, induration, inflammation, or suppuration of the lungs, (in one instance with coarctation of the pulmonary artery, in another with ossification of the pulmonary sigmoid valves,) in which the foramen ovale was found open; cyanotic symptoms having for a longer or shorter period preceded death. He particularly refers to the case of a man of sixty who had died of hydrothorax, and in whom the right side of the heart and the pulmonary artery were found dilated; the foramen ovale being indeed closed, but its fossa of such depth as to project like a thin pouch into the left auricle. He looks upon this example as demonstrating the way in which gradual reopening of the foramen ovale may take place. It must, however, be borne in mind that the unclosed state of the foramen ovale may, in several of the 13 cases, and especially in those in which the pulmonary artery deviated from natural, have existed from birth, without betraying itself by any decided symptoms, until some disease in the respiratory and circulating organs supervened; and, again, that the cyanotic symptoms may have sprung from the pulmonary affection alone, imperfect closure of the valve of the foramen ovale (which condition Bizot has shown to be no less frequent than insignificant) being merely a coincidence. In a word, although the possibility of acquired perforation of the heart's septa cannot be denied, no positive example of it has been witnessed.

"The relation of the *Eustachian valve* to the unclosed foramen ovale, first hinted at by Wolf, and more closely investigated by Meckel, is not unimportant. Among 80 hearts examined with reference to this point, he found 43 instances of

open foramen ovale, with the Eustachian valve large, often muscular, and entire, or but slightly reticular; in a woman of sixty in particular, the foramen ovale was an inch wide, and the Eustachian valve two inches long, almost half an inch high, and very strong. In 16, the foramen ovale was closed, and the Eustachian valve absent altogether, or merely rudimental, or else torn to pieces. In 13 the Eustachian valve was very strong, often muscular,—and the foramen ovale closed. In 8 there was hardly any Eustachian valve, and the foramen ovale was more or less gaping. The frequency of this favorable condition for the passage of venous blood to the foramen ovale and the left auricle, cannot therefore be doubted; and the presence of a strong Eustachian valve may be regarded as conducive to a mingling of venous and arterial blood.

"But what are the necessary conditions to this morbid commixture of the blood? This question is forced upon us by a consideration of the fact, that the influence of the mixed blood upon nutrition, shall be very palpable in some patients, and null in others. Indeed, in many cyanotic subjects the energy of the vital functions is unimpaired, (females menstruate regularly, and procreate healthy children, &c.) while others are constantly ailing, highly sensitive with respect to cold and other external influences, stunted in growth, (many emaciate, others again prone to obesity,) and perish, either early in life, or at one of the periods of evolution. In the former instances, therefore, the passage of venous blood into the arterial, must either not occur at all, or but to a slight extent, or only at certain periods. Jules Cloquet and Louis have shown that, apart from the cases in which a preternatural origin of the blood vessels necessarily keeps up an incessant mingling of the two kinds of blood, it does not take place through an orifice in the septa of the heart, when the walls of the two cavities which communicate with each other, are of equal thickness and strength, and scarcely, even where their strength is unequal, provided the heart's orifices are sufficiently ample. And in reality, wherever there is impaired nutrition, those relations are found wanting in various ways. In most cases there is present hypertrophy of the right auricle and ventricle, mostly eccentrical, but sometimes also concentrical. The walls of the right ventricle are frequently much thicker than those of the left, whence the heart assumes an almost globular shape, and quite a transverse position. Sometimes the left auricle and ventricle are simultaneously hypertrophied, though in not more than a fifth of the cases. The heart is then enormously enlarged, so as to embarrass the neighboring organs more or less, and to deviate from its natural position both behind and below. Under these circumstances, inflammatory phenomena about the heart and pericardium are not unfrequent precursors

of death. In six cases described by various authors, the signs of pericarditis, though for the most part of a modified character, were cognizable.

"*Coarctation* of the *right arterial orifice*, which is observed, in a smaller or greater degree, in about one half of the cases, must here exert a most material influence. On some occasions the pulmonary artery, at its commencement, is considerably narrower than usual, and does not dilate, until after the reception of Botalli's duct, in its pervious state; or there are ossifications at its valves, two of which perhaps are alone present; or in place of the valves there is a transverse membranous expansion, with a minus aperture; or the approach to the pulmonary artery within the ventricle, is contracted, forming a small channel, or, as in Nasse's case, blocked up by fleshy columns, hardly separate from each other. In all these instances, it is obvious, that the venous blood is more or less readily impelled directly into the left division of the heart. Nevertheless, there being not rarely a concomitant coarctation of the right auricular orifice, whether simple or arising from preternatural formation, or from ossification of the tricuspid valve, the possibility of arterial blood passing into the right side of the heart, especially during diastole, must be admitted, —more particularly where the right chambers of the heart are at the same time dilated. Upon the whole, this last mode of preternatural admixture of the blood must be acknowledged to be highly influential in determining the hypertrophy and ossifications of the right side of the heart, so common in cyanosis; inasmuch as these morbid conditions are otherwise almost entirely restricted to the left side, which *in cyanosis* is for the most part exempt from them.

"The most remarkable symptom of the organic conditions described, namely, the *blueness of the skin*, was formerly thought to be amply accounted for by the mingling of arterial with venous blood: the simple fact, however, that the decoloration is not permanent through life, deprives the explanation of its weight. The cyanotic phenomena sometimes do not set in until the third, seventh, or fourteenth year, nay, even later,— it may not be until shortly before death; occur periodically only, and at long intervals; are frequently brought on by quick walking, hasty movements, passionate emotions, intercurrent diseases, (hooping-cough, for instance,) external violence, and the like, and thus become permanently established, or else again vanish for a time. If the blueness depended upon the character of the blood, these alternations could not subsist. When, moreover, we reflect that in the fœtus, in which mixed blood always circulates, no such decoloration is perceptible; and that in a case by Breschet, in which the left subclavian arose from the pulmonary artery, no alteration of color was visible in the left arm; we feel it necessary to look for other

grounds for an explanation. This was already indicated by Morgagni. Kreysig (Herzkrankheiten, vol. ii.) was, however, the first to form a correct view of the subject, and Louis has subsequently demonstrated that the cyanotic tinge results from impeded flow of the venous blood back to the heart, or from thence to the lungs; any obstacle to the entrance of the blood into the right ventricle, or to its exit from thence into the pulmonary artery, being of course, in a high degree, propitious to such stagnation. It may be inferred from the foregoing, that from the organic relations peculiar to cyanosis, the stagnation in question may increase vastly on the preexisting impediments to the circulation being augmented by accidental causes, whether external or internal.

"Among the morbid phenomena in other parts of the organism, incident to cyanosis, there is not one that is not common to disease of the heart generally, and to hypertrophy in particular. Even the bulbous shape of the distal phalanges of the fingers, and the incurvation of the nails, are no more peculiar to cyanosis than to sundry pulmonary disease. A curious circumstance is the alleged tendency to whitlow among cyanotic individuals. Diminutiveness of the spleen, thyroid gland, and renal capsules, as urged by Nasse, is by no means constant, the reverse having been found in several instances."

"FŒTAL CONDITION OF THE LUNG AFTER BIRTH.—ATELECTASIS.

"This disease consists in the imperfect expansion of the lungs by the first inspirations after birth; that is,—in a permanence of the fœtal state, of the new-born infant. It is to be regarded as a disease dependent upon restricted functional development at the time of birth, and not upon any original defect of formation in the respiratory organs. When at all extensive, atelectasis terminates sooner or later in death; under more favorable circumstances, however, in early and complete, or in tardy and imperfect recovery. For, during the first days after birth, it is still possible that the evil may be surmounted by the vigorous penetration of air; whereas, at a later period, organic changes supervene, which forever incapacitate the undeveloped portion of lung from performing its proper office. There is, however, still wanting a complete account of atelectasis, as regards both materials and pathological deductions. I shall now endeavor to furnish as faithful an anatomical description as the case will admit of, the result partly E. Jörg's and partly my own research.

"An entire lung, or even an entire lobe, is seldom found in a state of atelectasis,—but for the most part only single and scattered lobules. Experience shows that certain portions of

the lungs are especially prone to retain the fœtal condition, namely, the inferior lobes of both lungs, and the posterior half of the remaining lobes generally. Still examples occur of several lobules near the anterior surface being found in like manner undeveloped.

"The diseased patches display a brown-red, or rather blueish-red color, which is more intense if the whole lobule is uniformly unexpanded,—in which case, it is marked off by a sharp contour from the surrounding pale-red healthy substance. Where, on the other hand, scattered cells within such a lobule have become inflated, the violet colour is interrupted here and there, and passes by a gradual transition, and without any distinct boundary, into the natural shade. A distinguishing feature of atelectasis is however this, that the above patches upon the surface of the lungs always exhibit a depression, the superincumbent pleura remaining perfectly smooth and polished. A lobe either entirely, or for the most part, in this condition, is never found enlarged, but on the contrary, of much smaller dimensions than the others, and almost as much collapsed as in the fœtus; in general deeply imbedded within the thorax, and drawn towards the entrance of the bronchi and blood-vessels. Hence single diseased lobules do not attain the same elevation of surface as the healthy ones with which they are surrounded, but, as already stated, form depressions more or less considerable, so that the general aspect may be likened to the dimples created by emphysema, in adult lungs. Neither by incision or pressure is any crepitation produced, unless where a few air-cells happen here and there to have become expanded. The same delicate reddish froth is never found here as in the healthy parts of the lung, but merely a small quantity of serous, slightly sanguineous fluid. The cut surface appears smooth—uniform,—without a vestige of granular elevations. The whole of the diseased structure is not softened, but rather of a hard character, still without the tenacity of the healthy parts. When a patch so situate is cut off and placed in water, it sinks to the bottom.

"When atelectatic infants die a day or two after birth, it is generally possible to dilate, artificially, the undeveloped parts. The depressed lobule is then seen to rise by degrees to the level of the rest, and to assume the color, permeability, and other characters of sound lungs. Up to this point, had other circumstances been favorable, perfect recovery might have taken place. Where, however the little patients have survived for weeks or months, this inflation seldom succeeds, or only imperfectly. At this junction the unexpanded pulmonary cells are for the most part coherent: a remarkable fact, seeing how long the lungs continue unexpanded in the fœtus, without adhesion ever taking place. What ulterior transformations go on in the diseased parts, it is not yet satis-

factorily determined; it is, however, more than probable that not a few endurations and depressions, especially the small calcareous concretions, sometimes occuring without any obvious cause, at particular spots within the lungs, (generally at the back of the inferior lobes,) are referrible in some measure to the above source. At all events, it may be observed generally that, in atelectasis, the boundary line between the diseased and the healthy substance becomes less and less distinct, in proportion as life is prolonged. At the earliest period of infantile existence the contrast is very decided, the diseased parts being immediately surrounded by pulmonary texture in all respects natural and healthy.

"In infants who had died of atelectasis, E. Jörg invariably found the foramen ovale of the heart unclosed; a fact confirmed by myself, but which, at that age, is not unusual. The brain was in a congested state. When death followed shortly after birth, the body had the apppearance of being generally well developed, but was extensively ecchymosed; the hands and toes were clenched; and there was foam in front of the nostrils and of the closed mouth. Where, however, the disease had been of some standing, the body was wasted and the skin loose and wrinkled. Jörg remarks, that under these circumstances, both the affected and the adjacent parts are found inflamed, if not in a state of suppuration. The details of Jörg's cases, however, clearly show them to have been complicated. Inflammation is neither necessarily nor even frequently the sequel of atelectasis, for often as I have witnessed this disease, I have never met with a case of inflammation which could be directly traced to the diseased lobule. I have even seen a case of genuine pneumonia with hepatization of the inferior lobe, one portion of which being *atelectatic*, had not participated in the inflammation, but presented hard, knotty, depressed patches in the midst of expanded, softened, hepatized substance. Lobules retaining the fœtal condition, are quite passive in relation to other morbid processes, and especially to inflammation; the examples given by Jörg appear to have been cases of real pneumonia.

"It is here requisite to state that *atelectasis*, with the characteristic features above described, is not always distinguished from other diseases; that condition having, in some instances, not been duly recognized, and, in many more, been confounded with quite dissimilar pulmonary affections. Indeed, the greatest discrepancy of opinion, or rather the greatest confusion prevails, so that I am here under the necessity, however hazardous it may appear, of submitting those discordant views to the ordeal of a critical examination. The French writers on children's diseases, who first turned their attention to the changes in the pulmonary texture of new-born infants, refer *atelectasis* chiefly, if not exclusively, to the head of *pneumonic*

lobulaire. Several German authors have, without further inquiry, adopted this view, (Vernon, Der Arat am Krankenbette der Kinder, Wien, 1838, vol. ii. p. 54, &c.;) while others, admitting the peculiarities of atelectasis when associated with ordinary pneumonia, continue nevertheless to connect it, either directly or indirectly, with the same inflammatory process. It will not be difficult to show wherein lies the essential difference between the two. In atelectasis, the coloring of the diseased portions of lung always approaches more to a violet, their exterior appearing smooth and glistening, so as to contrast with the dull, brown-red surface of inflammation. In inflammation, again, the diseased portions are preternaturally distended, while in atelectasis they are collapsed, and inferior even to the healthy texture in volume,—but susceptible, provided the disease has not lasted too long, of artificial inflation, and capable, through its means, of acquiring a perfectly natural appearance. In inflammation, the pulmonary texture is softened, in atelectasis it is hard, and the cut surface is not granular, but smooth. Where no complication exists, the anatomical characters of a first or third stage of pneumonia are not discoverable either in or near the diseased patch; in short, we have nothing like pneumonia except the solid, non-crepitant mass, which has been confounded with the second stage of that disease, namely, with red hepatization. Where single pulmonary cells have been found dilated in the midst of an undeveloped lobule, the absence of softening, and of the peculiar, congested, humid character of its texture, offers a wide difference between it and the first stage of pneumonia. A portion of lung retaining its fœtal condition allows a little thin, dark, apparently natural blood to escape upon pressure: in the first degree of pneumonia a tolerable quantity of a turbid, bloody fluid, mingled with fibrin, and with a few minute air-vesicles,—in red hepatization, a tenacious dirty-brown reddish,—in grey hepatization, a large proportion of grayish-yellow purulent fluid may be expressed. Atelectasis usually affects both lungs,—pneumonia is, for the most part, confined to one. Finally, the secondary phenomena attendant upon pneumonia, as inflammation of the pleura and of the bronchial mucous membrane, softening of the bronchial glands, fibrinous concrements within the heart's cavities, &c., are wanting in atelectasis. But the peculiar characters of this fœtal condition of the lung are only thus marked during the first few weeks after birth; subsequently, when, as already stated, ulterior changes take place, it becomes extremely difficult to form an exact diagnosis from mere cadaveric inspection.

"Jorg observed atelectasis in children, in whom the first act of breathing had been imperfectly accomplished, either because they were puny and feeble, or because they had been hurried into the world before placental respiration had been

altogether suspended, and the necessity for pulmonary respiration become sufficiently potent to stimulate all the muscles of respiration. He therefore concluded, that it was due to the inhaled air not sufficing to effect complete expansion of the lungs; a view corroborated both by the symptoms and course of the affection. This partial introduction of air might be deemed at variance with the physical laws of respiration, inasmuch as the atmospheric pressure must necessarily distend the entire lung equably, not to the exclusion of a lobe, and, still less, to that of a lobule. The objection, however, falls to the ground, when it is considered that the operation of these laws is the result of previous muscular action. Moreover, there is a great analogy between the pathological relations of primal respiration and those of many other affections,—pleurisy, for instance, (see that article,) where the one half of the chest—and especially in partial pleurisy, where certain portions—do not at all share in the movements of the remainder, —and where, again, after the absorption of circumscribed empyema, those very portions collapse and become totally inert, a partial deformity of the chest being the well-known result. We need, therefore, be at no loss to understand how defective breathing may originate in a merely partial activity of the intercostal or other repiratory muscles. It ought to be added, that such portions of the lungs as commonly require several forcible inspirations for their due expansion, are especially prone to remain in the fœtal condition. To conclude it can hardly appear singular that atelectasis should be generally more extensive in the right lung, when we call to mind how the capacity of that half of the thorax is diminished by the great size of the liver in the fœtal state.

"Atelectasis has been confounded with pneumonia by most writers on the diseases of children, as their own publications amply prove; for we find specified, under 'infantile pneumonia,' so much that is peculiar and enigmatical,—so many deviations from the same disease in the adult, as to render it obvious that two maladies of quite a dissimilar nature are brought under one rubric. Even the account they give of the appearances after death, are in many instances conclusive as to the justness of the above assertion; and that without reckoning the previous symptomatic relations,—namely, the frequent absence of true inflammatory phenomena, the want, or irregular accession of fever, and the very slender information derived from percussion and auscultation. The existing difficulties have induced several writers to assume a double form of infantile pneumonia. Rilliet and Barthez distinguish an acute and chronic type: the first occurs in children, somewhat advanced, commencing with the symptoms of catarrh, and resembling in general the pneumonia of adults; the chronic form, on the other hand, assails for the most part new-born

infants, and agrees, in symptomatic and anatomical characters, very closely with atelectasis. Thus Billard affirms congestion to be more common in infancy,—true hepatization at a more advanced period; and Heyfelder (l. c. p. 140) confirms the remark made at the hospital for sick children at Paris, namely, that in children beyond the sixth year, pneumonia bears a close affinity to that in the adult. But this division of cases does not remove the difficulty; because, as Gerhard has shown, atelectasis chiefly concerns infants not above twelve months old. Cruse, who very properly rejects the idea of atelectasis being a pneumonia or bronchio-pneumonia, met with genuine inflammation of the lungs in young infants very rarely, and found the after-death appearances to bear a resemblance to those of the disease in adults. His assertion, however, that in quite young infants this inflammation assumes only exceptionally, if ever, the same form as in adults, is in contradiction with experience,—so far at least as the anatomical characters are concerned. Again, the views promulgated with reference to the organic changes affecting the pulmonary texture, further evidence the obscurity and confusion that prevail. Valleix in his otherwise valuable work (p. 195), on the one hand, declares the pneumonia of children (though confounding it with atelectasis) to be identical with that of adults; whilst on the other he is perplexed by certain incongruities, really belonging to atelectasis. His greatest difficulty is, to account for the '*hepatized*' patches being always hardened, instead of softened, and for their cut surface being smooth, instead of granular. In the new-born child he never met with those secondary results of pneumonia, so constant in adults, and whatever has been encountered of that nature by others, he is forced to ascribe to some other morbific source. He also pointedly adverts to his own experience, as well as to that of others, touching the rarity of pleuritic or bronchitic complication. Billard (l. c. p. 534) expressly seeks to show that this disease essentially differs from the pneumonia of adults. He says: 'the pneumonia of the new-born obviously arises from stasis of the blood in the lungs, the stagnant blood operating as a foreign body,' &c.; and again, 'The cause of the inflammation is purely mechanical, and it is not to be wondered at that the pneumonia is very circumscribed, and indeed limited to the patches originally affected.' Seifert (Die Bronchial-pneumonie der Neugeborenen, &c. 1837,) in a like manner compares the state of the lungs in question with hypostasis, (where, however, softening takes place, and not hardening,) the inflammation being rather of a congestive, venous character. He assumes four grades of bronchio-pneumonia (p. 94); these do not, however, represent the same inflammatory disease in different degrees of advancement, but different forms of one and the same condition,

the description of which cannot fail to recall atelectasis to mind. Cruse (l. c. 113) endeavors to convince him that neither hypostasis nor inflammation is present, and hints at the possibility of atelectasis; but, without pursuing the subject any further, refers the pathological changes to bronchitis. Rilliet and Barthez come nearest to the truth, in describing under pneumonia of the new-born a peculiar alteration, namely, carnification. Here the affected portion is commonly situate at the base of the lung; it presents a smooth, compact cut surface, which, on pressure, emits a thin sanguineous fluid; it is sometimes associated with hepatization, and then the lung resembles that of a fœtus that has not yet breathed. The manner in which the disease spreads within the lungs is opposed to the course of pneumonia, but consistent with that of *atelectasis*. Seifert generally found both lungs similarly affected, and Valliex mentions, from researches made by Vernois at the foundling hospital of Paris, that, out 113 cases, there were 100 in which both lungs were simultaneously diseased.

"Unequivocal cases of infantile pneumonia, whether lobar or lobular, such as I have myself examined, and as Kiwisch has published (Oesterreich. Medic. Jahrb. N. F. vol. xxi., Stück 4, p. 534,) afford, on the other hand, the stongest negative grounds for establishing atelectasis as a distinct form. In the great majority of cases, Kiwisch found but one lung affected, the hepatized patches being invariably softened, and rendered cognizable from without, by a dull grayish coloring; conjointly with hepatization the other stages of pneumonia were present, including that of abscess; in every case there was pleuritic effusion more or less copious; bronchitis was seldom noticed,—endocarditis in one case; finally, percussion and auscultation always afforded the ordinary results, whilst the asphyctic and cyanotic phenomena were comparatively trivial.

"In concluding these critical remarks, I consider myself entitled to draw the following inferences: New-born infants are prone to an organic affection of the lungs, altogether distinct from pneumonia, and dependent upon imperfect inspiration after birth, by many pathologists confounded with pneumonia, and by Rilliet and Barthez designated as carnification. The greater number of cases of pulmonary disease occurring at the earliest period of infantile life, and set down as pneumonia, may be looked upon as cases of atelectasis.

This last assertion is, however, to be taken with some reserve,—inasmuch as, in vast laying-in or foundling hospitals (Kiwisch), pneumonia is apt to become epidemic with newborn infants, and, under these circumstances, to attain a numerical preponderance over *atelectasis*."

PART III.—BIBLIOGRAPHICAL NOTICES.

ARTICLE X.

LATHAM *on Diseases of the Heart.* Forming the Oct. No. of Bell's Select Medical Library.

The learned lecturer it is to be hoped, from the size of his volume, has succeeded in throwing some additional light upon this obscure and too frequently complicated class of diseases. He devotes these lectures to the use of mercurials in inflammations generally, and diseases of the heart in particular. A subject susceptible of much useful investigation. Of the *manner* in which he has handled it, and the disorders of the organ, the subject of the volume, we are not prepared to speak, having given it but a cursory examination. We shall take occasion to refer to it again. G. N. F.

ARTICLE XI.

The Prescriber's Pharmacopia. Published by S. S. & W. Wood, N. Y.

The above is the title of a small volume which has reached its third edition. It should be in the pocket of every young physician, containing, as it does, the most received prescriptions of the London and U. S. Pharmacopia's, arranged alphabetically under their appropriate heads. It will enable him promptly to select the one best adapted to any case in hand, without the necessity of a reference to an elaborate dispensatory. Moreover, time is often not afforded for such reference when the necessity for a prescription exists,—it is made from the physician's own memory of the effect of the substances entering into its composition, and he is liable to associate incongruous or incompatible articles. This unpretending little volume contains far more useful matter than many that are larger. Its assumed standard doses of many articles are much smaller than extended experience in their use warrants, when a decided effect is desired. G. N. F.

ARTICLE XII.

Chemistry of the Four Seasons—Spring, Summer, Autumn, and Winter: An Essay principally concerning Natural Phenomena, admitting of interpretation by Chemical Science, and illustrating passages of Scripture. By THOMAS GRIFFITHS,

Professor of Chemistry in the Medical College of St. Bartholomew's Hospital, &c. &c. Philadelphia: Lea & Blanchard. 1846. pp. 451. 12mo. (From the Publishers. For sale by Brautigam & Keen, Chicago.)

This little work is founded upon Lectures, delivered by the author at scientific institutions in London and Liverpool, and is an exceedingly comprehensive epitome of chemical science, as connected with natural phenomena. The author has succeeded to a remarkable degree, in the difficult task of popularizing science, and whilst his production is rendered perfectly comprehensible to the uninitiated, for whom expressly it was written, it cannot be said to be superficial. We cannot but admire the aptness of the author's experimental illustrations, and their perfect simplicity; so simple and easy of performance, indeed, are they, that they may be repeated successfully by the merest tyro in chemical manipulations. The style of the work is unusually agreeable and attractive, and to the serious it will recommend itself by the beauty and frequency of its reference to the evidences of design in the phenomena of nature. The part of the work describing the properties and modes of examining soils chemically, the influence of light, heat, electricity, &c., upon vegetation, will render the work valuable and interesting to horticulturists and husbandmen. In a word, no one can read this admirable little book without both pleasure and profit. The mechanical execution of the American edition does credit even to its well known publishers.

J. V. Z. B.

PART IV.—EDITORIALS.

ARTICLE XIII.

ON THE INHALATION OF ETHERIAL VAPOR FOR THE PREVENTION OF PAIN DURING SURGICAL OPERATIONS.

Every one has heard before this of the use of the "narcotic vapour," or "Lethion," for the prevention of pain during operations. As usual in similar cases, a number of claimants have arisen to contest the honor of the discovery. The credit seems to rest between Dr. Charles T. Jackson, a chemist of Boston, and Dr. Morton, a dentist of that city, who are named in the patent as inventors, the latter gentleman being proprietor,* and Horace Wells, a dentist of Hartford, who went to Boston, proposed its use to Drs. Morton and Jackson among others, but not succeeding well in its first trials, gave it up for want of encouragement. Mr. Wells, however, preferred the nitrous oxide to the ether, thinking it to be less dangerous. Drs. Jackson and Morton patented the ether, thinking it more convenient probably, or perhaps finding its effects more favorable.† The facts, if correctly stated, seem fully to vindicate the claim of Mr. Wells. So much for the discoverer.

Composition.—In regard to the substance made use of, its composition has not been made public by the patentees, but it is used everywhere with and without their permission, and is nothing else but pure rectified sulphuric ether. This at least has every effect ascribed to the patent vapor, although various preparations, consisting of sulphuric and chloric ethers with morphine, in form of sulphate or acetate, in different proportions, are in use. Sometimes a small quantity of etherial oil is added, but the addition of any or all these substances, seems neither to add to, or detract from, the effect of the sul ether.

Method of using it.—For this purpose a receiver is employed, with two orifices, as a two-necked bottle, to one of the orifices of which is attached a tube, furnished at its extremity with a mouth piece like that of a speaking trumpet, to fit the lips. In this tube is a valve, opening toward the mouth, so as

* Boston Med. & Surg. Journal for Nov. 18, 1846, p. 316.
† Ib. of Dec. 16. p. 398.

to allow the vapor to be inhaled, and closing to prevent it from being forced again into the bottle. When expired it escapes by an orifice in the side of the tube, which closes with a valve during inspiration. The receiver should be sufficiently large to hold a pint and filled with a sponge to present a large evaporating surface. An inhaling apparatus may be procured in Chicago for one dollar. As much ether should be put in the receiver as the sponge will absorb, and the orifices may be closed with corks until it is required for use. The patient being seated, if convenient, upon an easy chair, (or a recumbent position if required will do,) the nostrils should be closed and the mouth piece applied to the lips in such a manner as to prevent the introduction of air. The patient being directed to inhale and fill the lungs freely.

Effects on the System.—The first contact of the vapor with the air passages is often attended by a slight cough. After a few inhalations there are frequently manifest signs of excitement, such as clenching the fist, or efforts to rise, which, if restrained, immediately cease, and the patient falls into a state of profound insensibility. The respiration is slow and slight, the pulse is frequently reduced, at first in frequency, afterwards accelerated, the pupils are sometimes dilated, at other times natural, the person has all the appearances of being in a state of profound sleep.

These effects continue only a few minutes if the inhalation is suspended as soon as they are noticed, but if continued longer, they are more permanent; and there are a few cases on record in which the insensibility continued an hour or more.

The length of time required for inducing sleep varies in different cases according to the quantity of the vapor mingled with the air, and according also to the susceptibility of the system; we have seen very perfect sleep induced in one and a half minutes, in other cases it required seven or eight minutes, but there was a possibility of the vapor being weaker in these latter trials. During the inhalation a physician should feel the pulse, notice the effect on the respiration, observe whether the face is flushed or the veins of the neck distended. If any unusual effects are observed suspend the inhalation altogether, if not, continue till the sleep is perfect then discontinue, to renew it if signs of returning sensibility should ap-

pear before the operation is finished. It often happens that the patient will move and speak, as in somnambulism, and yet be insensible to pain, although at the moment of being hurt he may give signs of suffering. A young lady cried out when a tooth was extracted, but on recovery was unconscious of having suffered at all, but said she had a dream, and thought she was dreaming. These effects we have described from our own observations, and they correspond to those noticed by other persons in this city, upon probably from one to two hundred individuals to whom it has, up to the present time, been administered. But in a report signed by "twelve regular dentists," of Boston,* the common or frequent use of the article in dentistry is deprecated, on account of accidents which are stated to have been produced by its use. These effects were—1st, the long continuance of the state of insensibility; 2nd, the occurrence of delirium; 3d, the occurrence of nervous symptoms, as weeping, sighing, &c.; 4th, in one instance the patient "raised blood from the lungs, about a pint, and was suffering in consequence of the operation for three days after." From which this committee of regular dentists very justly conclude, "that this whole matter, be it of greater or less utility in surgical practice, should be put in the hands of those only who have testimonials from some one of our medical colleges, that they are worthy of being entrusted, as medical attendants, with the health and life of their fellow beings."

The exact nature of the effect resulting from the administration of the ether has been the subject of speculation; some supposing it to be a species of asphyxia, others that it results from temporary congestion of the brain, and others still, that it is a species of intoxication. It appears to bear no resemblance to asphyxia, the breathing being gentle and the veins of the neck being not at all turgid, showing that there is no obstacle to the circulation. Neither does it resemble congestion or depression of the brain, as is shown by the dreams, and absence of stutorous breathing, and fullness of the vessels attendant on congestion. The resemblance to intoxication is greater but not by any means perfect.

It seems to be a state of sleep or trance in which the sensibility is blunted, but the activity of certain of the mental faculties preserved.

* Ib. for Jan. 6, 1847, p. 472.

Uses.—It has thus far been used principally for preventing pain during the operations of extracting teeth and of amputating members, although there are some cases on record in which it has been employed before and during the extirpation of tumors, &c. A surgeon of the Massachusetts Hospital used it for the purpose of producing relaxation of the muscles while reducing a dislocation of the shoulder. It has however been proposed to use it for favoring the operation of the taxis in strangulated hernia, and it would be worthy of trial in a great number of severe neuralgic and spasmodic diseases.

Case 1.—On the 12th of January, 1847, a young man presented himself at the dispensary of Rush Medical College for amputation of the middle finger, rendered necessary by necrosis of the first phalanx, of four months standing. Being very timid, he wished something to prevent the pain, and the etherial vapor was administered to him for about five minutes, in a moderately concentrated form, when he became insensible. The finger and the head of the metacarpal bone were removed. He remained asleep a minute after the operation was finished, and on awaking and perceiving that it was done he smiled, and said, "that was pretty easy." No ill effects followed; he remained about a week in the city and returned to his home, on Fox River.

Case 2.—On the 24th inst., a young gentleman, also from Fox River, came to the dispensary, for the purpose of having some of the metatursal bones removed, for a caries and necrosis of long standing. The ether was inhaled in a concentrated form, signs of excitement were at first shown, but in a minute and a half he became insensible. The disease proving more extensive than appearances indicated, it became necessary to remove the metatursal bones of the three lesser toes, which were soft, and in fragments in the tissues. The operation was not completed until twenty-five minutes had elapsed, during which time the vapor had been inhaled five times; two or three inhalations being given as soon as signs of returning consciousness was perceived. Considerable blood was lost and partial syncope induced. On recovering he stated that he had scarcely any recollection of pain. No disagreeable consequences followed and he is doing well. The parts divided were in a state of inflammation, and few

operations are more painful or protracted. So that the test of the powers of ether was, in this instance, very perfect.

Desirous of knowing with greater certainty the effects resulting from long continuance of the operation, a large dog was made to inhale the vapor, in a concentrated form, for eight minutes. After a few inhalations he became insensible, stuggled feebly from time to time, and remained in a state of relaxation for a few seconds, with his head hanging from the table, when he recovered entirely. This experiment without being altogether satisfactory, goes far to show that the respiration of the vapor, even when concentrated and used sufficiently long to produce its full effects on the animal system, is not likely to be directly followed by any effects dangerous to life; but a series of experiments upon the lower animals is a desideratum, and until they have been performed we shall be in ignorance of the effects it is liable to occasion if prolonged much beyond the period necessary for producing insensibility. We have not time at present to prosecute these researches, but may do so at some future time unless the void should soon be filled by others.

At present we are justified in the conclusion, that with the precautions above recommended, this vapor may be generally administered with safety. The exceptions to this rule are those cases where there is disease of the lungs, tendency to apoplexy, or mania, or an extreme nervous temperament. In children too it is said to produce vomiting, and it is besides, in such cases, difficult to make them respire it.

Is the discovery the subject for a patent? The Boston committee of dentists state that they have consulted high legal authority, who are of opinion that the patent is not valid. We have also consulted several legal gentlemen of high standing in Illinois who are of the same opinion; but as the question will soon be brought before the proper tribunals for adjudication, it is not necessary to discuss it at present. Another, on which there will be less difference of opinion among scientific men, is in regard to the propriety of a physician taking out a patent for any improvement in medicine. This is contrary to any correct principle of medical ethics, and whatever may be said of preventing its abuse, and the liberal intentions of the patentees in regard to granting the right to use it to surgeons, it still presents them in the same attitude as the

proprietors of patent medicines; in great and strong contrast, with those honorable and benevolent physicians who are above keeping secret what may be useful to their fellow men, and who are rejoiced to see the discoveries they may make widely adopted, and universally beneficial.

As to the ultimate decision of the world upon the value of this means of preventing pain, it is impossible to foresee what it will be. It has already found advocates and opponents whose zeal is little calculated to favor the discovery of its true value. Some pronounce it free from danger, others think it unworthy of a trial. It has seemed to us to demand the most careful and dispassionate examination of surgeons.

We have given the results of our own observations, and add elsewhere such facts and opinions, from other sources, as will give our readers some idea of the great interest which it excites throughout the country.

D. B.

ARTICLE XIV.

COLLEGE DISPENSARY.

This noble charity, established by the Faculty of Rush Medical College, has been adopted as a county institution by the Commissioners of Cook county, and well may they be proud of an institution which so liberally scatters its blessings amongst the sick poor. There have been over two hundred prescriptions made for more than one hundred patients since the opening of the session of the College, in November.

In addition to the extensive relief afforded the poor sufferers, there has another most important end been attained by it. The prescriptions were made before the medical class—thus teaching the young men how to practice, and affording them an opportunity of witnessing the effects of treatment upon a large variety of diseases. After entering upon the duties of the profession, the students who have witnessed the treatment of these cases, meeting with the diseases, will recognize them as old acquaintances—enemies—with the weapons of warfare against whom they are already familiar, both as to their nature and application—and they go forward in practice with confidence and success.

The following diseases, as shown by the record of the Dispensary, many of which will form interesting reports for the Journal when drawn up by the clerk, were presented, and served as illustrations for clinical lectures on practice to the class:

Hypertrophy of the heart; dyspepsia; intermittent fever, with almost all its complications; enlargement of the spleen; conjunctivitis, acute and chronic; ascitis; anasarca; chronic pleuritis; neuralgia; dysmenorhœa; gastritis; peritonitis, chronic; hysteria; gastro enteric irritation; scabies; jaundice; bronchitis; erysipelas, influenza, &c.

And the following were presented illustrating the surgical clinic:—Enlarged tonsils; old laxation of elbow joint; indolent ulcers; abscesses; nasal polypi; caries of bones and polypus of the ear; strabismus; ulceration of stump of amputated leg; necrosis; hernia; fractures, of metacarpal bones and of neck of the femur; incised wound of knee; encysted tumor; morbus coxarius, with many others of less importance.

These required the following operations, which were successfully performed by Prof. Brainard before the class:—Amputations; removal of three carious metatarsal bones, done while the patient was under the influence of the sulphuric ether from inhaling its vapor, patient suffering but little pain; operation for strabismus; removal of tonsils; reduction of old laxation of elbow joint; removal of nasal polypi, of polypi from the ear; application of truss; extirpating tumors; operation for fistula in ano, &c. &c.

Ample trial was made of many of the new remedies and modes of treatment recommended by the profession. And it is a pleasing consideration, that while most of the patients have been discharged cured, not one has died. G.N.F.

ARTICLE XV.

MEDICAL BOOKS.

We are highly gratified to see our book merchants bringing on large and well selected assortments of medical books. Almost any medical work that the physician or student may require can be obtained in Chicago on as good terms as any where in the west. This is a great convenience to the medical public, and we hope that our friends may meet with an ample reward for their enterprise from rapid sales.

While on this subject we would drop a hint to our brethren through the country, that many of them have entirely too meagre a show of medical library, and occasionally we meet with one with scarcely a single medical book. This is all wrong. It is impossible for the practitioner, let him be ever so gifted, to maintain his ground, so far as science is concerned, unless he is a reader of medical books; to say nothing in reference to keeping pace with the great and important improvements that are yearly being made in the several departments of the science.

A friend of ours, a few years ago, said he had adopted as a rule to set apart annually of the proceeds of his practice fifty dollars, to be invested in books. The principle is a good one; and if each practitioner in the country would annually set apart the sum that he should determine before hand to be consistent with his wants and his ability, even if small, and invest it in the most approved works on the different branches of the science, and read them, it would in a few years ornament his office with a well selected library, and, what is more important, his head with a knowledge of the resources of the profession.

The time is coming when the profession in the west will assume a higher and a more dignified stand. We think the time not far distant. The signs look better; and amongst those that are decidedly encouraging are the increased number of students and physicians who attend upon the teachings of the medical schools, and the increase in the sale of medical books. E.

ARTICLE XVI.

"LANCETTE CANADIENNE."

We have received the first number of the "Lancette Canadienne," a native journal, published at Montreal, L. C., in the French language, and conducted by J. L. Leprohon, M.D. It is issued every two weeks, at $4 per annum, in a newspaper form.

The editor, in a modest and well written prospectus, sets forth the wants of a large number of physicians of Lower Canada who are of French origin, and have but an imperfect

knowledge of the English language. There are also some in the United States, who for various reasons would, we are sure, be pleased to see a medical publication in the French language, and gain an acquaintance with the practice of the numerous skillful physicians of Canada. To such the "Lancette" will in every respect commend itself, its object and spirit being excellent, and the selections judicious and valuable. We wish it success.

ARTICLE XVII.

NATIONAL MEDICAL CONVENTION.

We are pleased to see this proposition for the improvement of the profession meeting with more general approbation. Most of our cotemporaries have spoken in its favor, and many of the most respectable societies and colleges of the United States have appointed delegates to the meeting, to be held at Philadelphia on the first Wednesday in May next.

That some of the plans for reform in medical education proposed for the adoption of this Convention are utopian in the extreme, must be apparent; yet we see no reason why great good may not result from the deliberations of such a body of physicians, made up as it should be of the representatives of the great body of the profession in the United States; and as the influence of the Convention must to a great extent depend upon the fullness of the representation, we hope that all bodies entitled by the rules adopted will be represented on the occasion.

E.

ARTICLE XVIII.

TO SUBSCRIBERS.

To Subscribers.—The low price of the Journal makes it necessary that we insist upon prompt payments. We hope our subscribers will understand this without further comment and at once forward the amount of the subscription. Those who have not paid for the present volume will please forward for it and the ensuing year, as our terms are *payment in advance*. Payment may be made to either of the editors or to our authorized agents, and forwarded post-paid by mail at our risk.

PART V.—ABSTRACT.

ARTICLE XIX.

THE JOURNAL.

With this number we close the first volume of our enlarged Journal, and the third since its commencement, and having labored hard to render it worthy of the patronage of the profession of the great North-West, we turn our attention to the past, to see how far we have been able to accomplish the designs of our work—which are, to keep our readers advised of what is transpiring of importance in the profession, both at home and in foreign countries; and to afford to the physicians of the North-West, a medium of communication by which the valuable in their observations and reflections may be given to the public, while at the same time, it is made a matter of permanent record.

The Journal is now permanently established, and to those friends who have assisted it by their patronage, and by contributions to its pages, we tender our most hearty thanks; while we solicit from them, for the future, a continuance of their favors,—and especially do we ask that our list, both of contributors and subscribers, may be extended.

That we may at one glance see what has been done the past year, in the way of original communications, we will make a brief abstract of them by way of a recapitulation.

No I. Art. 1.—*Epidemic Erysipilas.* By Prof. Fitch.—This is a disease that has prevailed to a great extent in many locations in the west within the last few years, and perhaps in none more extensively than in the country around it, and in the town of Logansport, Ind., the residence of Dr. Fitch. The article shows that he was not an inattentive observer of the disease and the effects of treatment. He took notes of 213 cases, in 182 of which the attack was in the fauces, tonsils, sterno mastoid muscle, or cervical glands, showing a uniformity truly remarkable, and from which peculiarity in the disease, no doubt, it was for a time known by the appellation of "black tongue," although this symptom was actually present in two cases *only*.

The conclusions of Dr. Fitch are that the disease is decidedly contagious, yet often occurring in consequence of epidemic influences.

The principal reliance in treatment is placed in bleeding, which was very successful when resorted to at an early stage of the disease. Next in importance, in the commencement of the disease, are emetics. The use of cathartics was found important in many cases, of which calomel and castor oil were chiefly relied upon.

A gargle of dilute tinc. of iodine was found to be most efficient as an application to the fauces, and the local application most approved for arresting the spread of the inflammation was blistering in advance of it. For reducing the swelling and violence of the local disease, a lotion of dilute tinc. iodine. Where this failed, free incisions of the skin, or punctures with the lancet, were made to allow the escape of the serum beneath it, with decided advantage.

When the disease attacks pregnant or laying-in women it is almost always fatal, yet Dr. F. cured quite a number of such. He regards it as identical with epidemic puerperal peritonitis.

Art. 2.—*Wahoo.*—(*Euonymus Atropurpureus.*) By E. Andrew, M.D., now of Peoria.—The bark of the root is the part used. This remedy is said to have been used as a cure for intermittent fever by the aboriginies of this country. However, the strongest recommendation in favor of this, to the profession, new remedy, is in its effects as a hyrdrogogue cathartic, which are produced at the same time that a decidedly tonic influence is exerted upon the system. This renders it appropriate in dropsies attended with general debility; while the peculiar property of not losing its effects by continued use, would seem to point it out, as extremely appropriate in obstinate cases.

As this is a native western medicine, the shrub growing in almost all parts of the country, it becomes the duty of the profession to more extensively investigate its merits, and if it shall prove to be as valuable as Dr. A. regards it, it should be in general use.

Its virtues, in cases of anasarca and ascitis, following long continued intermittent fever, have been pretty thoroughly tested during the last few months in the dispensary of the Rush Medical College, and with the most favorable results. We shall be glad to hear how it succeeds in other hands.

The article is well written, and is on a very interesting subject.

No. II. Art. 1.—*Delirium Tremens.* By E. R. Long, M.D., U. S. Army.—This gives a concise view of the most prevalent opinions in regard to the pathology of the disease, and comes to the conclusion, that as a manifestation of "peculiar morbid excitement of the nervous system" is all the constant condition of the disease, we must refer it to the nervous system, and not to gastritis, meningitis, or any other local affection that is sometimes present and sometimes absent.

But these complications, or attendants, must be respected in treatment—and as gastritis is by far the most common, it will often be found necessary to be exceedingly careful of what is introduced into the stomach.

But independent of complications the anodyne treatment is clearly indicated.

Art. 2.—*Amputations in Scrofulous Diseases.* By Prof. Brainard.—This is an interesting and instructive article, showing by several cases reported from the author's own experience, and from Brodie, Druit, and Tamplin, that in many cases of scrofulous disease, affecting the joints, the limb may be saved by proper and patient application of the appropriate treatment; and that, even after exterior suppuration, caries of the bone, and hectic fever have supervened. Nor is this all—it is shown that in these cases amputation is extremely hazardous, as the scrofulous affection is liable to locate upon the lungs, mesentery, or other vital organs, and thus result in the loss of life.

It should always be remembered that it is a greater triumph in surgery, to save a useful member than to display skill in the performance of an operation.

Art. 3.—*Foreign Bodies in the Organs and Tissues.* By Prof. Herrick.—This article shows that foreign substances lodged in the organs and tissues of the body may give rise to symptoms, which for want of a correct history of the case, may perplex the practitioner. Cases are reported illustrating this fact, in all of which the removal of the substance resulted in a speedy recovery.

Art. 4.—*Case of the Bite of a Mad Dog and its Treatment.* By Dr. Stahl, M.D.—This is an interesting case, from the positive and satisfactory evidence of the rabid condition of the

dog, and the wound being on the hand, and not through his clothing; showing a strong probability of the patient being infected but for the treatment. This consisted in the use of the actual cautery to the wounds made by the teeth of the dog, kept running by ungent. cantharid, and ung. Hyd. Precip. rub. cum sulph. cupri., and the administration of ½ grain doses of ext. belladonna, repeated so as to induce the specific effects of the medicine. The patient showed no symptoms of hydrophobia.

No. III. Art. 1.—*Sulph. Quinine in the congestive modifications of Scarlet Fever and Measles.* By D. Stahl, M.D., of Quincy, Ill.—There is no doubt of the efficacy of quinine in the cure of the fevers so prevalent in the West, known by the appellation of "congestive." The author regards this type, which often modifies pneumonia, pleuritis, hepatitis, the exanthemata, and most other diseases of the country, as an adynamic condition of the system dependent upon a want of energy in the nerves, which quinine restores. This condition is very common in scarletina and rubeola, in which the author obtained the happiest results from the free administration of quinine in several cases, the reports of which are interesting to the practitioner.

Art. 2.—*The remote and proximate cause of Bilious Fevers of the South and West, considered in the light of Liebig's Theory of Animal Heat.* By S. G. Armor, M.D., of Rockford.—The author in this article makes many exceedingly interesting suggestions in reference to the influence of diet of a highly carbonized character over the system, and suggests that the abundance of carbon in the blood may be the cause of our fevers, and that the curative action of quinine may be, in effecting a chemical change, in the relative proportion of the constituents of the circulating mass.

It is an interesting inquiry, and if it would lead to a determination of the extent to which certain classes of food are appropriate, to be regulated by the thermometer, we might, but for the sudden and extreme changes in the temperature of the weather interfering, eat food with a certainty of its fitness.

Art. 3.—*Amputation of the Superior Maxillary, Malar and Palate Bones for disease of the Antrum. Recovery.* By Prof. Brainard.—This is an account of one of the most important operations that occur in the practice of the surgeon. The

disease for which it was performed was a rapidly growing tumor of a malignant character. It is interesting as showing the extent to which the bones of the face may be removed with safety to life.

ART. 4.—*Case of Mental Excitement allayed by Music.* By Prof. HERRICK.—This was undoubtedly a case of incipient insanity, produced by over excitement of the brain while the system was too much prostrated to endure it, and shows the power of what may be termed *moral treatment.* The music succeeded in allaying the excitement, no doubt, by fixing the attention; and by its peculiarly agreeable influence induced sleep after the failure of the most powerful narcotics.

No. IV. ART. 1.—*Observations on Insanity and its Treatment in private practice.* By Prof. EVANS.—This is a long article and contains some interesting statistics in reference to the cause of the disease—some appropriate reflections in reference to its nature—and gives a moral and physical treatment to be pursued by practitioners in the country, founded upon the improvements that have been recently made in the management of the insane.

ART. 2.—*Case of Tubucular Deposite in the Cerebellum. Autopsical Examination.* By P. A. ALLAIRE, M.D., of Aurora.—This is a concise and well written account of an interesting case. It shows the importance of autopsical examinations in determining the true nature of disease, and affords additional evidence that M. Gendrin and M. Lévellé are mistaken in asserting that "all cerebral tubercles are encysted."

ART. 3.—*Operation on the closure of the external orifice of the Vaginal Canal.* By A. E. AMES, M.D., of Roscoe.—Atresia of the vagina is of rare occurrence from membranous expansion, and where it does occur it is generally referable to an unnatural development in connexion with, if not of the hymen itself. This case was appropriately and successfully treated at an early age—certainly a much better course than to have left it to obstruct the menstrual flow in after life.

No. V. ART. 1.—*Blindness caused by the use of Sulph. Quinine.* By Prof. MCLEAN.—This article comes in most appropriately at this time, when the members of the profession seem to vie in the freedom with which they use quinine and the magnitude of its doses. Several cases from the author's own experience are reported, showing the effect indicated in the

title of the article. As this would be an appropriate time i the experience of practitioners to collect the deleterious effect of this medicine, we hope our friends will not neglect it. It influence appears to be principally over the nervous system This is manifested, we think, clearly by its influence in affect ing the organs of sense and the intellect. We saw a case o acute mania which lasted about thirty-six hours, in Novembe last, in company with Dr. Brinckerhoff, of Chicago, which ha evidently been produced by the patient's taking a 20 gr. dos of sulph. quinine, some hours before the attack, to cure an intermittent fever. A free dose of morphine procured sleep, after which the patient awoke and continued in his right mind.

ART. 2.—*A case of Strangulated Hernia in a man aged* 82 *years.* By Dr. J. HARVEY, of Ohio.—Hernia, at the advanced age of 82 years successfully operated upon, from the nature of things must be a rare occurrence. The suggestion of applying ice previous to an operation, to prevent hemorrhage, is a good one, and may be applicable in other cases than the one here tried.

ART. 3.—*Case of Placenta Previa.* By W. BUTTERFIELD, of Ottawa.—This is a case showing that the presentation of the placenta does not always occasion violent hemorrhage, even when left to the unaided powers of nature. How far the death of the child, and consequent suspension of the fœtal circulation may have been the cause of absence of hemorrhage, is difficult to say. Generally, in such cases, the flooding will be jointly from the matrix and the placenta.

ART. 4.—*Case of Encephaloid Tumor.* By JOHN COOK, M. D., of Vt.—This is but another of the many melancholy proofs of the malignancy of this disease. The removal of a tumor of this class appears to afford but temporary exemption, as it soon manifests itself in the same, or some other, and generally a more vital part of the system. No doubt remains of the disease being constitutional and the tumor a local manifestation of it.

ART. 5.—*Case of Hydrocephalus Internus successfully treated by Iodide of Potassium.* By L. BRACKETT, M.D., of Ind.—This case is well reported, the symptoms being given, which adds greatly to the interest of the case, as where they are not the profession must rely upon the knowledge and judgment of the reporter for the diagnosis.

The success of the medicine in this case highly recommends it to the notice of the profession.

No. VI. Art. 1.—*On the Treatment of Fevers and Inflammations without Mercury.* By A. G. Henry, M.D., of Pekin.—We have long concurred in the sentiment of the author that most cases of fevers might be successfully treated without the use of mercury. We would however observe the admission that in many cases benefit may be obtained from it—where the liver is torpid it is too well demonstrated that mercury or its preparations are indicated for them to be abandoned readily.

The suggestion of using as a substitute for mercury from four to six grain doses of opium, is as far as we know original with Dr. H., and if the practice is as successful in other hands as it has been in his, will prove of great value.

We hope we will be favored with more frequent communications from Dr. H. in future.

Art. 2.—*A Case of Idiopathic Tetanus.* By W. Wadsworth, M.D., of Wisconsin.—Tetanus both idiopathic and symptomatic is fortunately a comparatively rare disease.

Art. 3.—*On the Use of Quinine.* By A. W. Benton, of Sterling.—The author thinks that quinine acts by neutralizing "the sedative poison of malaria" in the cure of fever.

Art. 4.—*Case of Abscess of Female Breast from which a worm was discharged.* Reported by Prof. Brainard.—This case is unique, and it would be interesting to learn from Dr. Mead the result of the second abscess.

Art. 5.—*Reduction of Dislocation of the elbow of five months standing.* By Prof. Brainard.—This is an interesting case, and we shall hope at some future period to be able to give the final result of the treatment.

Art. 6.—*On the use of Nitric Acid Issues in chronic diseases.* By P. A. Allaire, M.D.—The experience of the author and the laws of chemical reaction point out nitric acid as a most excellent agent for the establishment of issues. The speed of its action and the profuse suppuration it induces, must highly recommend it. The author is much in favor of large issues.

Art. 6.—*Letter from Dr. Herrick.*—This gives an interesting account of the manners and customs of the Mexicans, and of the diseases and their treatment in our army.

From this brief recapitulation it is seen that our friends have most liberally contributed to our pages; and in reference to this we would observe, that contributions to the pages of a medical journal form the surest evidence that a physician is striving to keep pace with the science, and the plainest road to professional distinction. Few men will thoroughly investigate a subject, unless they are about to commit the result of their investigation to writing. The habit of investigating and writing may stand to each other in the relation of cause and effect, and may operate alternately. When one writes he should investigate thoroughly; and when he investigates thoroughly he is almost certain to write.

Reviews.—Our Review Department has been filled with reviews of the most important of the new publications as they have been issued from the press. We feel confident that our labors in this respect have been satisfactory and instructive to our readers.

Bibliography.—We have endeavored to notice all works, pamphlets, books, &c., which have been sent to us, and if we have made any omission in this respect, we ask that it may be attributed to oversight and not to intention.

Of the editorial matter we will not speak—but if the reader has any curiosity to refresh his memory in reference to it, he may turn back to that head in each number.

Abstracts.—This head will be found to be very interesting in several of our numbers. The researches in reference to the physiology and pathology of the blood, in numbers one and two, will be found to be exceedingly interesting.

Selections.—In making selections we have been governed to a great extent, by the consideration of usefulness in practice, hence our articles will many of them be found to be practical; yet we endeavor to glean from our cotemporaries all that our space will allow that is new, practical, curious, and otherwise interesting. E.

PART VI.—SELECTIONS.

1. *Abstract of Researches on Magnetism and on certain allied Subjects; including a supposed new imponderable.* By Baron Von Reichenbach. Translated and abridged from the German, by Wm. Gregory, M. D., F. R. S., Prof. of Chemistry, &c.

As our limits will not allow us to give the whole of an interesting abstract of this work, published in the Jan., (1847) number of the American Journal of Medical Sciences, we give the following extracts from it, which will show the nature of the pretensions set up, which all will see to be closely allied to those of Mesmerism:

Baron Von Reichenbach thinks he has demonstrated that magnets act on the human body, especially in certain conditions; and further, that he has demonstrated the existence, *in magnets*, of two forces, one which attracts iron and affects the needle, and one which acts on the nervous system, and which he has found unmixed *in crystals*. This new power, which he is disposed to view as the true agent in animal magnetism, he says, "is transferable from one body to another and is conductible through matter. A body may be, for a time, charged with it, and this is the true explanation of the fact, now demonstrated by the author, that a glass of water, as stated by Mesmer and his followers, may be magnetised by contact with a magnet, although that term is improper.

"But perhaps the most striking characters of this new power are, that it assumes, like electricity and magnetism, a polar arrangement in bodies, and that bodies charged with it are luminous, especially at the poles. The light, it is true, is only visible to certain sensitive individuals; but not only are such persons of tolerably frequent occurrence, but the author has gone far towards demonstrating, that, although invisible to ordinary eyes, actual light, nevertheless, does emanate from the poles of powerful magnets.

"The author finds the new power in many unsuspected quarters, in the sun's rays, the moon's rays, heat, electricity, friction, and, above all, chemical action; and the numerous and beautiful applications which at once suggest themselves, give a tenfold interest to this part of his researches. The human frame, especially the hand, whether in virtue of the incessant chemical changes going on in the body, or independently, is a rich source of the new power."

The new influence which the author thinks he has detected in magnets, in crystals, in light, heat, electricity, and chemi-

cal action, is due, he confesses, to the existence of his "new imponderable."

"Magnets of 10 lb. supporting power," says the author, "when drawn along the body, downwards, without contact, produce certain sensations in a certain proportion of human beings. Occasionally in 20, 3 or 4 sensitive individuals are found; and in one case, out of 22 females, examined by the author, 18 were found sensitive. The sensation is rather unpleasant than agreeable, and is like an *aura*, in some cases warm, in others cool; or it may be a pricking, or a sensation of the creeping of insects on the skin; sometimes headache comes rapidly on. These effects occur when the patient does not see the magnet, nor know what is doing; they occur both in males and females, although more fequently in females; they are sometimes seen in strong healthy people, but oftener in those whose health, though good, is not so vigorous, and in what are called nervous persons. Children are often found to be sensitive. Persons affected with spasmodic diseases, those who suffer from epilepsy, catalepsy, chorea, paralysis, and hysteria, are particularly sensitive. Lunatics and somnambulists are uniformly sensitive."

Healthy sensitive persons observe nothing further than the sensations above noticed, and experience no inconvenience from the approach of magnets. But the diseased sensitive subjects experience different sensations, often disagreeable, and occasionally giving rise to fainting, to attacks of catalepsy, or to very violent spasms. In such cases there occurs an extraordinary acuteness of the senses; smell and taste, for example, become astonishingly delicate and acute. The patients hear and understand what is spoken three or four rooms off, and their vision is often so irritable, that, while, on the one hand, they cannot endure the sun's light or that of a fire, on the other, they are able, in very dark rooms, to distinguish not only the outlines but also the colour of objects, where healthy people cannot distinguish anything at all.

The author's first series of recorded experiments refer to the appearance of light, visible only to the sensitive, at the poles and sides of powerful magnets.

"Mlle. N. being in catalepsy, insensible and motionless, but free from spasms, a horse-shoe magnet of 20 lb power was brought near to her head, when the hand attached itself so to the magnet, that whichever way the magnet was moved, the hand followed as if it had been a bit of iron adhering to it. She remained insensible, but the attraction was so powerful that when the magnet was removed in the direction of the feet, further than the arm could reach, she, still insensible, raised herself in the bed, and with the hands followed the magnet as far as she possibly could, so that it looked as if she had been seized by the hand, and that member dragged to-

wards the feet. This was daily seen by the author between six and eight, P. M., when her attacks came on, in the presence of eight or ten persons, medical and scientific men. At other periods of the day when she was quite conscious, the phenomena were the same. She described the sensation as an irresistible attraction, which she felt compelled against her will to obey. The sensation was agreeable, accompanied with a gentle cooling aura streaming or flowing down from the magnet to the hand, which felt as if tied and drawn with a thousand fine threads to the magnet. She was not acquainted with any similar sensation in ordinary life." Similar results were obtained in other cases; in one case (the one quoted) a certain amount of attraction was also observed in the foot, but far weaker. It was found that the hand of the cataleptic patient had no attraction for iron filings, did not in the least affect the needle, and excited no appreciable attraction on a magnet, which was counterpoised on the beam of a balance, and brought near to the hand, although it required some force to prevent the hand from rising to the magnet. That is to say, while the magnet attracted the hand, as it were vitally, the hand did not attract the magnet statically."

In connexion with the foregoing is an article that more clearly defines all this class of phenomena than anything that has yet made its appearance, from which we take the following:

The Power of the Mind over the Body; an experimental Inquiry into the Nature and Cause of the Phenomena attributed by Baron Reichenbach and others to a "New Imponderable." By JAMES BRAID, M.R.C.S.E. (Edin. Med. & Surg. Jour. Oct. 1846.)

The preceding article contains an account of the wonderful, supposed, new discoveries of Baron Reichenbach, and in the present will be found the results obtained by Mr. Braid, on repeating the experiments of the former. This paper cannot fail to be read with deep interest. So curious and important does it seem to us, that we have not hesitated to give it nearly *in extenso*, and to appropriate to it far more space than is accorded to articles in this department of the Journal. It is one of the most valuable contributions to mental physiology and pathology that has for a long time been presented.

"On the first announcement," says Dr. Braid, "of Dr. Gregory's abstract of Baron Reichenbach's 'Researches on Magnetism,' I lost no time in procuring a copy, which I perused with intense interest. I had not proceeded far, however, when my experience with hypnotic patients enabled me to perceive a source of fallacy, of which the Baron must either have been ignorant, or which he had entirely overlooked.

From whatever cause this oversight had arisen, I felt confident that however carefully and perseveringly he had prosecuted his experiments, and however well calculated they had been for determining mere physical facts, still no reliance could be placed upon the accuracy of conclusions drawn from premises assumed as true, where especial care had not been taken to guard against the source of fallacy to which I refer, viz: the important influence of the mental part of the process, which is in active operation with patients during such experiments. I therefore resolved to repeat his experiments, paying the strictest attention to this point; and, as I had anticipated, the results were quite opposed to the conclusions of Baron Reichenbach. It is with considerable diffidence that I ventured to publish an opinion opposed to such high authority; but I shall briefly state the grounds of my own belief, and leave it to others to repeat the experiments, and determine which opinion is nearer the truth. The observations which I have to submit may, moreover, prove suggestive to others, and enable them not only to avoid sources of fallacy with which I am familiar, but may also lead to the detection of many which may have escaped my own observation.

"The great aim of Baron Reichenbach's researches in this department of science has been to establish the existence of a new imponderable, and to determine its qualities and powers in reference to matter and other forces, vital and inanimate. It unfortunately happens, however, that the only test of this alleged new force (with one solitary exception, and that as I thought by no means a satisfactory one), is the human nerve; and not only so, but it is further admitted that its existence can only be demonstrated by certain impressions imparted to, or experienced by, a comparatively small number of highly sensitive and nervous subjects. But it is an undoubted fact that with many individuals, and especially of the highly nervous, and imaginative, and abstractive classes, a strong direction of consciousness to any part of the body, especially if attended with the expectation or belief of something being about to happen, is quite sufficient to change the physical action of the part, and to produce such impressions from this cause alone, as Baron Reichenbach attributes to his new force. Thus every variety of feeling may be excited from an internal or mental cause—such as heat or cold, pricking, creeping, tingling, spasmodic twitching of muscles, catalepsy, a feeling of attraction or repulsion, sights of every form or hue, odours, tastes, and sounds, in endless variety, and so on, according as accident or intention may have suggested. Moreover, the oftener such impressions have been excited, the more readily may they be reproduced, under similar circumstances, through the laws of association and habit. Such being the fact, it must consequently be obvious to every intelligent and unpre-

judiced person, that no implicit reliance can be placed on the human nerve, as a test of this new power in producing effects from external impressions or influences, when precisely the same phenomena may arise from an internal or mental influence, when no external agency whatever is in operation.

"In order to guard against this source of fallacy, therefore, I considered it would be the best mode to throw patients into the nervous sleep, (the term adopted by me in preference to mesmeric sleep, for reasons to be explained presently,) and then operate on such of them as I knew had no use of their eyes during the sleep (for some have), and to take accurate notice of the results when a magnet capable of lifting fourteen pounds was drawn over the hand and other parts of the body without contact, after the manner described, as performed by Baron Reichenbach in his experiments.

"I experimented accordingly, and the results were, that in no instance was the slightest effect manifested, unless when the magnet was brought so near as to enable the patient to feel the abstraction of heat (producing a sensation of cold), when a feeling of discomfort was manifested, with a disposition to move the hand, or head, or face, as the case might be, from the offending cause. This indication was precisely the same when the armature was attached, as when the magnet was open: and in both cases, if I suffered the magnet to touch the patient, instantly the part was hurriedly withdrawn, as I have always seen manifested during the primary stage of hypnotism, when the patients were touched with any cold object. Now, inasmuch as patients in this condition, generally, if not always, manifest their perceptions of external impressions by the most natural movements, unless the natural law has been subverted by some preconceived notion or suggested idea to the contrary: and as I have operated with similar results upon a considerable number of patients, we have thus satisfactory proof that there was no real attractive power, of a magnetic or other nature, tending to draw the patient, or any of his members, so as to cause an adhesion between his body and the magnet, or between the latter and iron, as Baron Reichenbach had alledged. I conclude, therefore, that the phenomena of the apparent attraction manifested in his cases were due entirely to a mental influence; and I shall presently prove that this is quite adequate to the production of such effects.

"A lady, thirty years of age, was requested to hold out her right hand over the arm of an easy chair, whilst she turned her head to the left, to prevent her from seeing what I was doing, and to watch and describe to me the feelings she experienced in the hand during my process, which was to be performed without contact. She very soon felt a pricking in the point of the third finger, which increased in intensity and at

length extended up the arm. I then asked her how her thumb felt, and presently the same feeling was transferred to it; and when asked to attend to the middle of the forearm, in like manner the feeling was presently perceived there. All the time I had been doing nothing; the whole was the result of her own mind acting on her hand and arm. I now took the large magnet, and allowed her to watch me drawing it slowly over the hand, when the feeling was much as before, only that she felt the cold from the steel when brought very near to the skin. It was precisely the same when closed as when opened, and the same sensations occurred when the north pole alone approximated, or the south alone, or both together. She experienced no sense of attraction between her hand and the magnet from either pole, nor from both combined. I now requested the lady to keep a steady gaze upon the poles of the large horse-shoe magnet, and tell me if she saw anything, (the room was not darkened nor was the light strong,) but nothing was visible. I then told her to look steadily, and she would see flame or fire come out of the poles. In a little after this announcement, she started, and said, 'Now I see it, it is red; how strange my eyes feel;' and instantly she passed into the hypnotic state. This lady had been repeatedly hypnotized. I now took the opportunity of testing her as to the alleged power of the magnet to attract her hand when asleep, but, as in other cases, the results were quite contrary—the cold of the magnet (and of either pole alike) caused her to withdraw her hand the moment it touched her. I now requested her to tell me what she saw (she being still in the sleep.) She said she still saw the red light. I desired her to put her finger to the place where she saw it. This she declined to do, being afraid that it would burn her. I thereupon assured her that it would not burn her, upon which she pointed to the same place where the magnet was held before she went into the sleep, instead of to where it was now held, which was near to her face, but towards the opposite side of the chair. This lady does not see from under her partially closed eyelids when hypnotized, as some patients do; and the evidence her testimony affords in support of my opinion upon this subject, is very conclusive, as she is a lady of very superior mental attainments, and one whose testimony merits unlimited confidence.

"I beg to call particular attention to the fact, that in this latter case, as with the fifth of the vigilant cases narrated, the first experiments were tried without any magnet or other object being pointed at or drawn over them, and still the mental influence was quite sufficient to change the physical action and produce decided and characteristic effects, where there could be no influence from without, of the nature alleged by Baron Reichenbach and the mesmerists.

"I had long been familiar with the fact, that during a certain stage of hypnotism, patients may be made to give various manifestations, or declarations of their feelings and emotions, according to previously existing ideas, or suggestions imparted to them during the sleep; and, moreover, that such associations once formed, were liable to recur ever after, under a similar combination of circumstances. As occurs in ordinary dreaming, they seem generally at once to adopt the idea as a reality, without taking the trouble of reasoning on the subject as to the probability of such ideas being only imaginary; and their extreme mobility at a certain stage of the hypnotic state, renders them prompt with their corresponding physical response. In proof of this, and how readily those attentive to these facts may misapprehend what they see realized in such cases, I beg to submit the following interesting illustration. When in London lately, I had the pleasure of calling upon an eminent and excellent physician, who is in the habit of using mesmerism in his practice, in suitable cases, just as he uses any other remedy. He spoke of the extraordinary effects which he had experienced from the use of magnets applied during the mesmeric state, and kindly offered to illustrate the fact on a patient who had been asleep all the time I was in the room, and in that stage, during which I felt assured she could overhear every word of our conversation. He told me that when he put the magnet into her hands, it would produce catalepsy of the hands and arms, and such was the result. He wafted the hands and the catalepsy ceased. He said that a mere touch of the magnet on a limb would stiffen it, and such he proved to be the fact.

"I now told him, that I had got a little instrument in my pocket, which, although far less than his, I felt assured would prove quite as powerful, and I offered to prove this by operating on the same patient, whom I had never seen before, and who was in the mesmeric state when I entered the room. My instrument was about three inches long, the thickness of a quill, with a ring attached to the end of it. I told him that when put into her hands, he would find it catalepsize both hands and arms as his had done, and such was the result. Having reduced this by wafting, I took my instrument from her, and again returned it, in another position, and told him it would now have the very reverse effect—that she would be able to hold it, and that although I closed her hands on it, they would open, and that it would drop out of them, and such was the case,—to the great surprise of my worthy friend, who now desired to be informed what I had done to the instrument to invest it with this new and opposite power. This I declined doing for the present; but I promised to do so, when he had seen some further proofs of its remarkable powers. I now told him that a touch with it on either extremity

would cause the extremity to rise and become cataleptic, and such was the result; that a second touch on the same point would reduce the rigidity, and cause it to fall, and such again was proved to be the fact. After a variety of other experiments, every one of which proved precisely as I had predicted, she was aroused. I now applied the ring of my instrument on the third finger of the right hand, from which it was suspended, and told the doctor, that when it was so suspended, it would send her to sleep. To this he replied, "it never will," but I again told him I felt confident that it would send her to sleep. We then were silent, and very speedily she was once more asleep. Having aroused her, I put the instrument on the second finger of her left hand, and told the doctor that it would be found she would not go to sleep, when it was placed there. He said he thought she would, and he sat steadily gazing at her, but I said firmly and confidently that she would not. After a considerable time the doctor asked her if she did not feel sleepy, to which she replied "not at all;" could you rise and walk? when she told him she could. I then requested her to look at the point of the fore-finger of the right hand, which I told the doctor would send her to sleep, and such was the result; and, after being aroused, I desired her to keep a steady gaze at the nail of the thumb of the left hand, which would send her to sleep in like manner, and such proved to be the fact.

"Having repaired to another room, I explained to the doctor the real nature and powers of my little and apparently magical instrument,—that it was nothing more than my portmanteau-key and ring, and that what had imparted to it such apparently varied powers was merely the predictions which the patient had overheard me make to him, acting upon her in the peculiar state of the nervous sleep, as irresistible impulses to be affected, according to the results she had heard me predict."

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2. *Note on the Vitellary nature of the Corpus Luteum.* By C. D. Meigs, M.D., Professor of Midwifery in Jefferson Medical College, &c. (In a letter to the editor.)

Dear Sir:—I made, at the last meeting of the American Philosophical Society, a statement with regard to the Corpus Luteum, to the following effect:

Upon turning the screw of the compressor, while a bit of fresh corpus luteum lies between the plates, I can, with a magnifying power of 500, perceive the escape from the crushed mass of vast numbers of corpuscles resembling, in every particular, the granules and corpuscles of the yelk of an egg.

I have made the observation a great many times—and I

have placed upon the platine, portions both of fresh yelk and fresh corpus luteum of the cow. Upon the most rigorous comparison of the microscopic appearances in each case, I cannot discover any difference, except that from the crushed bit of corpus luteum there escapes with the yelk grains, a certain quantity of detached cellular, or epithelial structure and blood discs.

When a portion of bright yelk, or a portion of equally bright corpus luteum is under the objective, the whole of the transmitted light, before the focus is obtained, is yellow, and alike in both cases, while the transmitted light is also yellow in passing through a single, or three or four separate corpuscles of either substance.

The micrographers have not noticed this appearance. Dr. Bischoff, in his *Entwickelungsgeschicte*, takes notice of numerous punctiform bodies, but does not hint at an idea of their being yelk grains.

The discovery of the vitellary nature of the corpus luteum, if I have really made the discovery, ought to prove interesting to the physiologist and the medicologist. I beg you, therefore, to do me the favor to mention the circumstance in the forthcoming number of your valuable Journal, in order that the microscopic observers may test its truth or error.—*Amer. Jour. of the Med. Sciences.*

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3. *Schools as they are and as they should be.* By H. M. Bullitt, M.D., Professor of Physiology and Pathology in the Medical Department of St. Louis University.

Medical education is a subject in which all classes of men should feel deeply interested. The demand for physicians is a public demand, and not a mere professional requirement. The rapid increase of population in the United States has created such a call for doctors, that each year there seems to have arisen further necessity for the extension of the facilities of acquiring medical instruction. This necessity has been recognized not alone by the profession, but as well by the public, at whose cost indeed many of the medical institutions have been established. Every principal city in the Union accordingly has its school, and some of them are provided with several; so that the supply of schools, at least, seems to be now equal to the demand for doctors. Now, whilst we are willing to admit that there has been, and will continue to be, an annually increasing demand for physicians, to supply the growing population of the new States, and that this demand creates a demand for new schools, we doubt much whether the schools that are springing up in all directions, are the description of institutions which are calculated to supply the country with such physicians as it is entitled to. As a

general rule, these institutions are established by, or at the instance of physicians who have either been disappointed in practice, or who for some reason have never become practitioners; restless, disappointed men, whose sole object is lucre, and who regard medical teaching as a traffic, to be carried on as other kinds of trade, merely for money, and who look upon the schools as business firms, to be sustained by hard puffing, diligent electioneering, or *drumming*, and extensive advertising. With such men it is a matter of little moment whether the students who may be attracted by this canvassing and advertising, are educated or not. They regard the relation of student and teacher as precisely similar to that of buyer and seller, and make the rule "caveat emptor," the standard of their moral obligations. Institutions which are in the hands of such persons cannot of course be suitable establishments for the education of physicians. The students of medicine generally are young men whose experience in the affairs of life is necessarily limited, and whose ability to judge of the qualifications of teachers of medicine is still more limited. They start from their homes with the determination to enter as pupils of some school which has been recommended by their preceptors, but before they can reach their destination they are often compelled to pass through some one or more places where there are schools of medicine, which, like other business firms, have their *drummers* stationed about in all directions, by whom every youth who looks like a medical student is to be beset with soft words and winning solicitations. Thus inexperienced, students are continually diverted from their original detornations, and induced, in disregard of the advice of their preceptors, to matriculate and disgorge the price of their tuition into the coffers of an institution of which they have never heard, and are left, perhaps, to spend their winter under auspices so little favorable to improvement, that they return in the spring, with nothing gained but a bundle of *tickets*. Or it may be that they have left their homes with directions to become the pupils of a particular school in a certain city, which they may be fortunate enough to reach without being interrupted on their way. Here perhaps there is another school than that to which they have been consigned, and it often happens that they are scarcely set down at the hotel of their choice before they are approached by some *kind hearted, disinterested* personage, who volunteers his advice, which is to disregard that of their preceptors, and become the pupils of another school; which, in the estimation of the adviser is infinitely superior to that to which they may have been consigned. This *purports*, of course, to be the advice of a *wholly disinterested* man, who is presumed, from his residence on the spot, to be perfectly familiar with the comparative merits of the schools. The reader doubtless recognizes in this

personage the "drummer" of the school whose interest he so insidiously advocates. Well, the unsuspecting students are induced at last to visit the school thus highly recommended by this unknown *friend*, and compare its teachers with those of the school which their *true friend*, their preceptor, has recommended; and thus they are seduced into the clutches of these *professional speculators*. The result may be easily foretold. If they be susceptible of flattery, as most young men are, the superlatively condescending attentions of these professional dignitaries will so charm and fascinate them, that they will find it almost impossible to resist the solicitations to matriculate, and take their "tickets," even before they have visited the school of their deliberate choice at all. No comparison, therefore, is made; but even were this attempted, students are not qualified to decide between good and profitable teaching and its more fascinating semblance. These are not mere fancy sketches, drawn for amusement, nor for sinister purposes, but veritable pictures, as true to facts as the most faithful Daguerreotype can be to nature.

Now in view of the dangers by which students are thus beset, two things become important; first, that private preceptors should regard it as one of the most imperative duties to their pupils to select a school for them, and guard them effectually against the danger of being seduced off from this school of their choice. The pupils should be made to understand that certain schools will use every means which avarice can suggest to obtain their money by securing them as pupils; and they should be especially instructed that such a course is indicative at once of want of professional pride, and of conscious inferiority. I hold that no honorable man can descend so low as to use such means, and no man of real merit as a teacher can do it; because true Science imparts to her faithful followers a dignity and elevation of character which would revolt at the idea of deception or injustice. An honorable man, such as the true lover of Science is always found to be, regards the money with which a pupil starts from his home as already the property of those to whose hands he has been consigned, and would look upon himself as little better than a swindler were he to become possessed of it by seducing the pupil from the course advised by the preceptor. Such interference with the rights of the private preceptor or with the interests of the school recommended by him, must elicit the scorn and contempt of all honorable men. A true lover of Science, conscious of his own merit, would spurn the thought of gathering a class by any such means. Let every physician, therefore, who undertakes the responsible office of private preceptor, make it his especial duty to select from among the various schools of the country the one which in his judgment may seem most worthy, and use his influence with his pupils to

induce them to finish their course of study in such institution. In this way the schools will be judged by those whose finished education is presumed to qualify them for the task. The teachers must thus stand or fall by the judgment of their peers. And mere speculators in the business of medical teaching will less easily build up their schools by means of flattery and deception.

But it may be said that those who are likely to be the private preceptors of the majority of pupils can not, from their remote situations, in the villages and country places, have opportunities of forming just estimates of the abilities of teachers whom they have never heard lecture, and that they must therefore leave it with the pupil to decide amongst the schools according to the information they may get after leaving home, aided by their own observation. We must confess we do not see the force of this objection to the course we have recommended; for there are various means of estimating the merit of a school, within the reach of every physician. In the first place, every public teacher should be a contributor to the cause of the profession, through some one or more of the medical journals, and thus afford the profession some evidence of his merit. But the best method of estimating the desert of a school, is by the proficiency of its alumni. Most of the schools are yearly sending forth graduates to all parts of the country, and the attainments and success of these, as they are exhibited while they are yet fresh from the colleges, is perhaps the best criterion of the worthiness of their alma mater. But granting that the private preceptors are not in possession of the means of judging between the schools, it becomes necessary in that case that they should instruct their students as to what constitutes good teaching. The pupil should be made to understand that the mere manner and voice of the lecturer have less to do with the business of scientific teaching than young men are prone to suppose. A musical voice and stump orator manner will please, perhaps fascinate the mind of the inexperienced student; but these are far from being necessary, or even commendable in scientific lecturers. The style of the best and most esteemed teachers of science is entirely conversational, and necessarily so, because it is only when the speaker begins to theorize, or rant, or moralize that the manner and cadences of the stump orator or the forensic or pulpit orators ever can be advantageously employed. There are so many different styles of lecturing in the different medical schools of our Union, that it is admitted to be a difficult matter to determine the exact degree of faultiness of the bad; but we can apply to them the method of exclusion, and thus be able to determine when they are not good. This is to be accomplished by indicating the styles which are adopted by the best teachers and found to be

best in practice. But as this will require some care and reflection, we shall postpone its consideration for the present.—*St. Louis Med. & Surg. Journal.*

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4. *Medical Eras.*—Every fresh event is dignified by the name of ERA, now-a-days; we seem to have arrived at the *era of eras*. There are the MESMERIAN era, the HAHNEMANNIAN era, the PRIESSNITZIAN era, and at length we have, as we said on a former occasion, the quintessence of all in the FORBESIAN era—not to mention the DICKSONIAN, the MORRISONIAN, the ELLIOTSONIAN, the RASPAILIAN, and others of a kindred spirit. In the midst of the age of eras, why should not *we* lay claim to one? We must do so in self-defence. Ours, then, shall be the ANTI-QUACKERY ERA.

We have begun a task, and will go on with it. We are already in the second year of *our* era. We have devoted one year to this subject, and are willing to devote a life to it, if so be this hydra may be beheaded and seared. But the profession must assist us. They must no longer enact the wagoner calling upon Jupiter; they must put their own shoulders to the wheel.

We have dwelt on the injuries accruing to public morals, public health, and the interests of the profession, from the vices of quackery. We have dwelt, too, upon the numerous modes in which professional men may and do, sometimes inconsiderately, sometimes from questionable motives, second the influence of this social Moloch. We have pointed out some of the evils arising from testimonials in favor of quack nostrums, from the system of prescribing quack medicines, and from the by no means singular evil of medical men appearing as the proprietors of such medicines, and from the system of allowing the most nefarious quacks to take what liberties they please with, and to convert to any vile uses, the names of men known and eminent in the medical profession.

The wrongs wrought at the Royal Society we have exposed, and will expose again. But the profession ought to feel the question as their own, and raise their voice as one man against such enormities. Now that we are attacking *the quackeries*, exposing the knavery of the duping and the folly of the duped, we emphatically say, let the profession help us, or rather let them help themselves, for the cause is their own. Medicine is indeed *militant* in these days, and every true son of medicine should be a soldier in defence of his profession.

But, aided or unaided, we will drive all the *isms*, and all the *eras*, the GENUS of quacks, and the essense and quintessence of quackery, from our good and beneficent profession, into their own regions of darkness and crime, with their own nicknames of "drug doctors" and "drug diseases," for their fiendish consolation; and we beseech every member of our profes-

sion to recoil from touching either their works or the works in which they are given shelter, as they would shun the viper, its venom, and its nest; and to shun their very words, terms, and descriptions, as profane and obscene words are shunned by the excellent of the earth.

Wherever labor, effort, talent, originality, striving to raise the status, by raising the science, of our profession, be discovered, let the members of that profession be prompt to express its applause,—let calumny, whether in our conversations, or in our critical labors, cease,—let the dignity of our profession be upheld,—let all wrong, and let all quackery, in or out of it, be eschewed.

If there be a name in the profession which we ought to revere, it is that of Louis; for labour, for probity, for talent, that physician is without a parallel. Did our readers ever peruse the first few pages of the "Examen de l'Examen?" We will one day lay these before them. It is a perfect picture of a great and good man—of a high-minded and conscientious physician. His writings, like his noble physiognomy, have the sternness of inflexible integrity and truth; his heart is filled with the love of mankind, and devotion to his profession. But what shall we say of the Louis critics, who are striving to turn his authority against medicine,—striving to prove from him, for instance, that bleeding is of no value in pneumonia, and, therefore, neither in rheumatism, nor in acute inflammation of any kind. Some defender of Louis, who shall rescue him from his slanderers, is required. Everywhere we are met with perversions of the facts and results of Louis, in favour of quackery, of "nature," of the "vis medicatrix," and the other excuses of quackish empiricism.

To return to our *era*. Let us establish a code of ethics,—let us be tender of the reputation of our profession, and of our professional brother—let calumny cease,—let our conduct be ethical, our opinions logical; the former implies every honorable feeling; the latter, laborious research, accuracy, probity, and a profound hatred of all quackery, whatever its parentage or its name, whether within or without the pale of the profession. Let us do justly, foster the right and the truth, repudiate wrong, iniquity, and falsehood, with all slander against our profession, all calumnies, and all nicknames. Let the profession, and let every individual thereof, be true to itself and himself.—*Lancet*, in *Med. News*.

RUSH MEDICAL COLLEGE.

SUMMER COURSE OF INSTRUCTION.

A COURSE OF LECTURES will be delivered in this Institution, to commence on the first Monday of April next, and continue 12 weeks, as follows:

On Operative Surgery, application of Bandages and Apparatus; on Auscultation and Percussion. By D. BRAINARD, M.D.

On Organic Chemistry, Vegetable Chemistry in its relation to Pharmacy, and Animal Chemistry in its relations to Physiology and Pathology. By J. V. Z. BLANEY, M.D.

On Anatomy. By CICERO ROBBE, M.D.

The Dispensary, at which there are now treated a large number of cases weekly, will be kept open, and Clinical Lectures will be given upon all the more interesting diseases which present themselves. The students will be exercised in examining and recording cases.

The Anatomical Rooms will be open during the month of March, and every facility will be afforded for the prosecution of practical Anatomy.

The fee for the entire course is $25. Boarding can be obtained at $1 50 per week.

Chicago, Feb. 17, 1847.

TO READERS AND CORRESPONDENTS.

We have received communications from Dr. P. Henry Clark and Prof. David Prince.

The following works have been received:—

Adulteration of various Substances used in Medicine and the Arts, with the Means of Detecting them: intended as a Manual for the Physician, the Apothecary and the Artisan. By Lewis C. Beck, M.D., Prof. of Chemistry in Rutger's College: Honorary Member of the Medical Society of the State of New York, etc. New York: Samuel S. & William Wood, No. 261 Pearl Street. 1846. pp 333. 12mo.

An Anatomical description of the Diseases of the Organs of Circulation and Respiration. By Charles Edward Hasse, Professor of Pathology and Clinical Medicine in the University of Zurich, etc. etc. Translated and edited by E. W. Swayne, M.D., Physician Extraordinary to H. R. H. the Dutchess of Kent. Philadelphia: Lee & Blanchard. 1846. pp. 277. 8vo. (From the Publishers.)

Latham on diseases of the Heart. Forming the Oct. No. of Bell's Select Medical Library.

Chemistry of the Four Seasons—Spring, Summer, Autumn, and Winter: An Essay principally concerning Natural Phenomena, admitting interpretation by Chemical Science, and illustrating passages of Scripture. By Thomas Griffiths, Professor of Chemistry in the Medical College of St. Bartholomew's Hospital, &c. Philadelphia: Lea & Blanchard.—1846. pp. 451. 12mo. From the Publishers. (For sale by Brautigam & Keen, Chicago.)

Summary of the Transactions of the College of Physicians and Surgeons of Philadelphia—from Sept. to Nov. 1846, inclusive.

Lecture on Obstetrics, &c., by G. S. Bedford, M.D., Prof. in the University of New York—Session 1846-7.

An Introductory Lecture, delivered before the class of the Baltimore College of Dental Surgery, by A. Wescott, A.M., M.D., Prof.

Annual Catalogue of the Med. Department of the University of Louisville.

Observations on Intermittent Fever, by William M. Bowling, M.D., of Montgomery, Alabama.

Valedictory Lecture, delivered before the Class in Rush Medical College, by John McLean, M. D. and Professor.

Annual Catalogue of Western Reserve College.

Annual Announcement of the Medical Institute, Cincinatti, Ohio.

Several interesting extracts relative to the use of the etherial vapor have been crowded out.

The following have been received in exchange:—

The Annalist, a Record of Practical Medicine.
The Buffalo Journal and Medical Review.
Stockton & Co's Dental Intelligencer. (Phila.)
Boston Medical and Surgical Journal.
New York Medical and Surgical Reporter.
The Medical Examiner.
The Missouri Medical and Surgical Journal.
The Medical News and Library.
The New York Journal of Medicine.
The Practical Educator and Journal of Health. (Boston.)
The Bulletin of Medical Science.
The American Journal of Insanity.
The Western Journal of Medicine and Surgery.
The Prairie Farmer.

CONTRIBUTORS TO THE ILLINOIS & INDIANA MED. & SURG. JOURNAL.

A. H. Howland, M.D., Ottawa, Ills.
A. G. Henry, M. D., Pekin, Ills.
Ewd. Lewis, M. D., Jackson, Mich.
John McLean, M. D., Jackson, "
Daniel Stahl, M. D. Quincy, Ill.
Edward Mead, M. D., Geneva, Ill.
E. Fisher, Waynesville, Ohio.
H. S. Huber, M. D., Chicago, Ill.
Saml. G. Armor, M.D., Rockford, Ill.
Ira C. Bachus, M.D., Jackson, Mich.
J. G. Cornell, M.D., Spring Arbor, "
G. N. Fitch, M.D., Logansport, Ind.
J. F. Henry, M.D., Burlington, Iowa.
E. Deming, M.D., Lafayette, Ind.
S. B. Thayer, Battle Creek, Mich.

INDEX.

Abstinence from drinks in the treatment of some diseases, 83
A defence of the medical profession of the U. States, notice of 47
Adulteration of various medicinal substances, by L. C. Beck, M. D., notice of 427
" " " review of 512
Ambrosia Trifida as a remedy for mercurial salivation, 465
Amputation for scrofulous diseases of the joints, by D. Brainard, M. D., Prof. &c. 106
Amputation of the superior maxillary, malar and palate bones, for disease of the antrum: recovery, by Prof. Brainard, 205
Anœmic murmurs, 379
Annalist, new periodical, notice of 427
Appointment of Dr. W. B. Herrick to the medical staff, 266
Apthœ, treatment of, by sulphuric acid, 383
Arsenic, on the use of calcined magnesia as an antidote to, by Prof. Peter, 356
Association of medical superintendents of American institutions for the insane, report of 360
Auscultation, a clinical introduction to the practice of, by H. M. Hughes, M. D., notice of 249

Baldness and falling out of the hair, treatment of 82
Ballard's elements of materia medica and therapeutics, notice of 243, 434
Beck's manual of adulterations of medicine, notice of 427
" review of 512
Bile, in the animal fluid, method of detecting the presence of a minute quantity of 74
Bile, mode of detecting morbid 75
Bismuth, subnitrate of, in Gastralgia, 479
Blindness caused by the use of sulphate of quinia, by Professor McLean, 385
Blood in dropsies, with albuminous urine, an abstract, 158
Blood, physiology and pathology of, report 56
Brodie's clinical lectures on surgery, notice of 245
Budd on diseases of the liver, review, 209
Buffy blood, mode of diagnosing 374

Cancer of the testicle, by John Cooke, M. D., of Vermont, 391
Catalepsy relieved by music, case of 179
Certificates of medical men to quack remedies, 382
Chemical testimony speculative, cases showing with what caution it ought to be received, 478
Chemistry, Hoblyn's, notice of 245
Chemistry of the four seasons, by T. Griffiths, Prof., notice of 542
Closure of external orifice of vaginal canal, operation for, by A. E. Ames, M.D. Roscoe, Ill. 326
Clymer on Fevers, review, 328
Coley on diseases of children, notice of 341
" " " " review 395
Colic, lead, treatment of 365
Convention, national medical 49, 149
Convention, common school, 342, 552
Corpus, luteum, note on the vitellary nature of 568
Copaiba, water of, injections, 375
Cornea, ulceration of, the danger of using certain washes in 81
Congestive Fever, practical remarks on 459
Croup, observations on 452

Death, supposed 84
Death from innoculation with matter from an ulcer succeding the vaccine vesicle, 93
Defence of the medical profession of the United States, notice of 47
Deformities, lectures on the nature and treatment of, by R. W. Tamplin, F. R. C. S. E. review, 132
Delirium tremens, an essay on, by Lieut. Edwin Ramsay Long, M.D., U. S. Army, 97
Delivery during sleep, 182
Delivery, rapid, without previous pains, 182
Diabetes mellitus, 83
Diarrhœa of infants, clinical lectures on, Hospital Neckar, 280

Diarrhœa, cases of, with emaciation, coming on after weaning, treated successfully with kreosote, 458
Digestion, a lecture on the physiology of, by Martyn Paine, A.M., M.D., &c., notice of, 145
Diseases of children, a practical treatise on, by J. M. Coley, M.D., notice of, 341
" " " review 395
Diseases of the liver, by Geo. Budd, M. D., review, 209
Diseases of the eye, by S. Littell, M.D., notice of, 243
Dissector, United States, by Prof. Horner, notice of, 341
Dislocation of the elbow, reduction, by Prof. Brainard, 500
Dispensary of Rush Medical College, 549
Dowler on yellow fever, notice of 428
Dr. Herrick, letter from 440
Dropsy, congenital, 459

Eberle's Treatise on the practice of medicine, notice of 147
Editorial notices, 49, 148, 252, 342, 436, 544
Electrical girl, 180
Elements of mat. med. and therapeutics, by Ballard, notice of 243
" " " " review, 434
Emetics in children, 468
Euonymus Atropurpureus, or Wahoo, an essay on the therapeutic virtues of, by E. Andrew, M. D. 15
Epidemic Erysipelas, as it occurred in Logansport, In., and its vicinity, by Prof. Fitch, 1
Ergot of rye in lingering labor, conditions for its safe employment, 181
Eruptions on the head and face in children, 350
Etherial vapor, inhalation of, for the prevention of pain during surgical operations, 544
Evans on insanity, 289
Exchanges, our 346

Fascination of serpents, 187
Fevers, distinctive characters of remittent, typhoid and typhus 85
Fever, bilious, the remote and proximate cause of, by S. G. Armor, M.D., Rockford, Ills. 189
Fevers, five dissertations on, notice of, 244
Fevers, diagnosis, pathology, and treatment of, by Meredith Clymer, M.D., review, 328
Fevers and inflammations, on the treatment of, without mercury, by A. G. Henry, M.D., Pekin, Ills. 489
Fordyce on fever, notice of 244
Foreign body in the tongue for thirty two years, 83
Foreign bodies in the organs and tissues, by Prof. Herrick, 115
Floodings, 366

Galvanism, the use of, in lumbago, sprains, &c., 373
Gastralgia, subnitrate of bismuth in 479
Goodhue's address before the Rock River Medical Society, 260
Gonorrhœa, treatment of 375

Hasse on diseases of circulation and respiration, review, 526
Hernia, strangulated case of, by Dr. J. Harvey, 388
Herrick, Dr., letter from 507
Hoblyn's Chemistry, notice of 245
Homeopathy, allopathy & young physic, by J. Forbes, M. D., &c., review, 23
Homeopathy, 456
Hemorrhage, on the mode of arresting 383
Hospitals for the insane, 431
Hospital Neckar, clinical lecture of 286
Hughes on Auscultation, notice of 249
Hydrocephalus, a case of, successfully treated with iodide of potassium, by L. Brackett, M. D., of Rochester, Ind. 393

Injections, cold astringent, in uterine hemorrhage, 91
Insanity, neglect of the study of, by physicians, 174
Infants, milk a cause of disease in 76
Intermittent fever, on the curative medication of 270
Infants, clinical lectures on diarrhœa of 280
Issues of nitric acid in chronic diseases, by P. A. Allaire, M.D. 502
Intermittent fever, combination of carbonate of iron with sulph. quinine in 383
Insanity, observations on, by Prof. Evans, 289

Johnston and Martin, on tropical climates, notice of 244
Journal, notice of our 49, 148
Journal, abstract of articles in 553

Kermes Mineral, on the use of, in diseases of the respiratory organs, 377
Kidney, minute anatomy of, abstract, 155

Lancette Canadienne, notice of 551
Latham on diseases of the heart, notice of 542
Lead colic, treatment of 365
Liston and Mutter's surgery, notice of 250
Littell on diseases of the eye, notice of 243
Liver, diseases of, by Geo. Budd, M. D., &c., review, 209
Lobelia Inflata, on the use of 375
Lunatic Asylums, 148

Mad-dog, case of the bite of, and treatment, by D. Stahl, 118
Magnesia, calcined, as an antidote to arsenic, 356
Magnetism, abstract of researches on 561
Mal-practice, prosecution for, arbitration, 262
Mal-practice in midwifery, 473
Mammary glands, case of premature development of 458
Manual of the diseases of the eye, notice of 243
Materia medica and therapeutics, by E. Ballard, M.D., &c. 243, 434
Medical school, notice of another 149
Medical convention, national, notice of 49, 149
Medical convention at Rockford, notice of 153
Medical science and art, fragments of, by H. J. Bigelow, M. D., review, 35
Medical school, new 442
Medical school in Michigan, 442
Medical institution, Willoughby 443
Medical society, Rock River, preamble and constitution of 252
Medical college, another, in Phila. 53
Medical eras, 573
Medical Books, 550
Mental excitement allayed by music, 207
Mental cultivation and excitement, by A. Brigham, M.D., review, 121
Menstruation in an infant, 189
Mercurial salivation, remedy for 465
Milk, pathological conditions of, as a cause of disease in infants, 76
Miller's surgery, notice of 248
Murphy on Parturition, notice of 427

Non-mercurial treatment of syphilis, 475
Nostrum certifiers, 188

Obstetriciana, by Dr. Dowler, 182
Obituary, Lieut. E. R. Long, M. D., U. S. Army, 54
Operation for closure of vagina, by A. E. Ames, M. D., 326

Paralysis, 68
Phlebitis, 166
Poisons, lecture on antidotes to, abstract, 370
Parturition, lectures on, by E. W. Murphy, M.D., 427
Periodical, new, the annalist, notice of 427
Placenta previa, case of, by W. Butterfield, M.D., 390
Placenta, extraction of, in unavoidable uterine hemorrhage, 92
Polypi of the female urethra, 272
Practice of medicine, by Eberle, notice of, 147
Pregnancy, vaginal, case of 189
Prescriber's pharmacopœia, 542
Premature Interments, 190
Pregnancy, new sign of 375
Purpura hemorrhagica, turpentine in 81

Quackery in New York, 284
Quinine, sulph. blindness from the use of 385
Quinine, use of, by A. W. Benton, M.D., 497
Quiniæ, sulph. new mode of administering 367
Quiniæ, sulph. the endermic application of 368
Quinine, the manner of using, abstract 444
Quiniæ, sulph. in scarlet fever & measles 193

Readers and correspondents, to 95, 191, 287, 384, 480, 575
Rush Medical College 153, 436, 575

Scrofulous diseases of joints, amputations for, by Prof. Brainard, 106
Scabies, on the treatment of 85
Schools as they are and as they should be, 567
Secret remedies, 440
Singultus, 383
Statistics of medical schools, 345
Subscribers, to 552

Suggestions, useful 367
Surgery, by Liston and Mütter, notice of 250
Surgery, orthopœdic, in Europe, 275
Surgery, by Velpeau, notice of 47
Surgery, Brodie's lectures on, notice of 245
Surgery, Miller's practice of, notice of 248
Syphilis, non-mercurial treatment of 475
Tamplin on deformities, review, 132
Tetanus, case of idiopathic 493
Transactions of medical society of New York, 146
Trismus Nascentium, 347
Tubercular deposite in the cerebellum, 324
Tumor at orifice of meatus urinarius, 176
Turpentine in purpura hemorrhagica, 81
Uterine hemorrhage, cold astringent injections in 91
Uterine hemorrhage, unavoidable, Lee's objections to extracting placenta in 92
Vaccine aphorisms, 93
Vaginal pregnancy, case of 189
Velpeau's surgery, notice of 47
Vision, case of uncommon acuteness of 459
Yellow fev., Dowler on, notice of 428